

ANNUAL REPORTS
OF THE
PRESIDENT AND TREASURER
OF
HARVARD COLLEGE
1894-95



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PRESIDENT'S REPORT FOR 1894-95.

TO THE BOARD OF OVERSEERS : —

The President of the University has the honor to submit the following Report for the academic year 1894-95 ; namely, from September 27th, 1894, to September 26th, 1895 : —

Oliver Wendell Holmes, Professor of Anatomy, *Emeritus*, died on the 7th of October, 1894, in the eighty-sixth year of his age. Dr. Holmes was Professor in the Medical School for thirty-five years (1847-1882). The title of his chair comprehended in 1847 the two great subjects of Anatomy and Physiology ; and it was not till 1871 that he was relieved of the subject of Physiology. Not content with the official charge of these two vast subjects, he was in the habit of including in his instruction the elements of Histology and Microscopy. In teaching the elements of these last two subjects to large classes of medical students, he was distinctly a pioneer. He was wisely exacting in regard to the dissections over which he usually lectured, and, in consequence, six of his demonstrators and prosectors became eminent surgeons. His lectures were clear, concise, and interesting, and were illuminated by a keen but kindly wit. His wide reputation as an essayist and poet has somewhat obscured the fact that for twenty-five years of his prime his principal occupation was medical teaching. His temperament was vivacious and his career brilliant ; but at the foundation of his character lay a remarkable capacity for hard, conscientious, persistent labor.

Thomas Motley, Instructor in Farming since 1870, died on the 9th of March, 1895, in the eighty-fourth year of his age. Mr. Motley received this appointment at the time when the Bussey Institution was first organized, and the University began to occupy the beautiful Woodland Hill estate on which Mr. Motley had lived for many years. He had great love for animals and trees, and a good knowledge of New England farming, not as a means of making a livelihood, but as an interest-

ing and dignified occupation for a man of property. This knowledge he liked to impart. He was punctual and zealous in the discharge of his duties as Instructor, upright, warm-hearted, capable of intense feeling and quick in expressing it, stern and repellent towards persons he distrusted, but singularly courteous and considerate towards persons for whom he felt respect or admiration. His whole personality was of a striking type not likely to be soon represented again on the University staff.

Thomas Henderson Chandler, Professor of Mechanical Dentistry, and Dean of the Dental Faculty, died on the 27th of August, 1895, in the seventy-second year of his age. Dr. Chandler was first appointed Adjunct Professor of Mechanical Dentistry in 1869; and on the resignation of Dr. Keep in 1871 he succeeded to the Professorship of Mechanical Dentistry. He was the third Dean of the Dental School, succeeding Dr. Thomas B. Hitchcock in 1874. He had, therefore, been in the service of the School for twenty-six years, and had been Dean for twenty-one years. Dr. Chandler received from Harvard University the degrees of Bachelor of Arts and Bachelor of Laws; but for some years after graduating from the Law School, he was a school-teacher. His dignified manners, cultivation of mind, and high sense of duty, made him an officer of great value to the Dental School. He had the satisfaction of seeing the School grow from small beginnings to a well-organized and firmly-planted department of the University. He was always ready to take part in any movement for elevating the standard of the School, improving its instruction, and adding to the value of its degree; and to all its interests he was heartily devoted.

Leverett Saltonstall, a member of the Board of Overseers, died on the 15th of April, 1895, in the seventy-first year of his age. Mr. Saltonstall was elected to the Board of Overseers by the Alumni in 1876, and served two terms till 1888. After the shortest possible interval — one year — he was again elected to the Board, and was approaching the end of his third term at the time of his death. There has never been a more affectionate son of Harvard than Leverett Saltonstall. He inherited through six generations of ancestors in a direct

line a strong feeling of gratitude and devotion to the College. Several of his ancestors had been its benefactors ; and he himself was always glad to serve it in every way within his power. He was bound to it not only through his ancestry, but through many friends and associates, and through his children. In public and in private life, he was a high-minded, generous, and just man, who did honor to his family stock, the place of his education, and the community in which he lived.

Fred Homer Woodcock, Instructor in Mechanical Dentistry, died on the 27th of June, 1895, in the twenty-seventh year of his age. Dr. Woodcock was appointed Instructor in 1893, and served the Dental School faithfully and well. He was courteous and patient, skilful and efficient.

William Crowninshield Endicott, a Fellow of the Corporation since 1884, sent his resignation to the President and Fellows on the 24th of September, 1895, on account of the state of his health. His professional distinction, and his impartiality, good judgment, and firmness, made him a weighty member of the Board. He was a member of the Board of Overseers when elected to the Corporation, having been a second time chosen by the Alumni to that Board.. The President and Fellows greatly regretted the loss of his friendly and dignified presence at their meetings, and of his support in the discharge of their trust.

Although the elective system had been rapidly developing in Harvard College ever since the year 1866, it was not applied to the Freshman year until the year 1884-85. In that year more than half the work of the Freshmen became elective ; and since then the remnant of prescribed work in the Freshman year has been diminished by the abandonment of two elementary lecture courses, one in Physics and one in Chemistry. For persons who pass examinations at admission in both elementary French and elementary German, English is the only prescribed study in Harvard College. For persons who only pass in either French or German at admission, that one of the two languages in which they do not pass an examination is required in the Freshman year. The College has now had eleven years' experience of a nearly complete election of their

studies by all its students. The distribution of the students among all the courses of instruction, elementary and advanced, has been published in the Annual Reports with every possible detail, and from these annual figures it is now practicable to state with approximate correctness the subjects and courses which steadily attract large numbers of students. During these eleven years, it is to be observed, many changes have occurred among the teachers assigned to the most frequented courses; so that the desire to attend these courses is reasonably independent of the teachers' personality.

Greek. Considerable numbers choose a first year's course and a second year's course, these two courses being followed in many cases by one more course which may fairly be called advanced. The first year's course and the second year's course are in practice sub-divided into several courses under different teachers, in order to meet the variety of preparations and of tastes which the persons who wish to study Greek exhibit. This sub-division is important at Harvard College, because each Freshman Class is recruited from a large number of schools and colleges (more than 100 in 1895) of different sorts and grades.

Latin. Many students choose one first year's course, one second year's course, and subsequently a more advanced course. Others take one or two of these three courses; so that three courses of the grades indicated are usually well filled. The same remarks about the sub-division of the courses of the first and the second year, which have been made concerning the Greek courses, apply to the Latin courses.

English. Three successive courses in English Composition extending through the Freshman, Sophomore and Junior years are much resorted to, one course being taken in each year. At present the Freshman course is prescribed, and the courses in the Sophomore and Junior years are either prescribed half-courses, or elective full-courses which may be substituted for the prescribed half-courses. The tendency is to make this substitution.

Two courses on English Literature are always well attended; one of these is usually on Shakspere, and one on more recent literature. The department offers some variety of courses on

English Literature ; so that students may select the period they like best.

German. Two successive courses in German, above the elementary course which is prescribed for Freshmen who enter without German, are always in demand.

French. Three successive courses in French, above the elementary course which is prescribed for Freshmen who enter without French, are attended by considerable numbers.

Philosophy. An elementary course in Philosophy is always chosen by a large number of students, and some higher course, which may be selected from several offered, is also in demand.

Practical Ethics. One course on this subject is generally attended by a considerable number of students.

Political Economy. An elementary course in this subject is always much frequented, and in many cases this first choice is followed in a subsequent year by the choice of one advanced course, selected from several which are habitually offered.

History. Three and one-half courses in History are fully attended, one full-course in Mediaeval and Modern European History, one in the Constitutional and Political History of the United States, one in American History down to 1783, and a half-course in Constitutional Government. In addition to one or more of these courses many students take another more advanced course.

History of the Fine Arts. Two courses on this subject are generally followed by large numbers of students, the subjects themselves, as well as the manner in which they are presented, having proved very attractive.

Mathematics. Four half-courses, — namely, one each in Trigonometry, Algebra, Analytic Geometry, and Solid Geometry, — and one full course in the Differential and Integral Calculus, are always well attended ; but on account of the nature of the subject there is no considerable resort to courses higher than those mentioned.

Physics. Two consecutive courses in Physics may be said to be well attended, and there is ordinarily a fair attendance on some one of the higher courses. The elementary courses in this department are by no means so well adjusted to the

varying needs of new-comers, as the elementary courses in the languages and mathematics.

Chemistry. One course in descriptive Chemistry is elected by large numbers, and in many cases one more course is subsequently chosen.

Botany and Zoölogy. One half-course in each of these subjects is much frequented, and in many cases this choice is followed by the choice of one higher course. These elementary half-courses rest on no instruction given at schools, and are for many students their only contact with Natural History.

Geology. One elementary course in Geology is frequented, as are also, but in much less degree, two kindred half-courses, one in Physical Geography and the other in Meteorology. A considerable number of students prosecute Geology and Geography to the extent of one course above these elementary courses.

If the courses mentioned in the above list be summed up, it will appear that they contain an amount of work at least twice as great as any undergraduate can perform in four years; so that there would be an imperative necessity for election of studies even in a college which limited its instruction to these few comparatively general courses which meet common wants. Persons who have been familiar with the old prescribed curriculum of American colleges will recognize the similarity of the above list to that curriculum so far as the selection of subjects goes. Certain well-marked differences, however, are obvious at first sight. English, including English Literature, is much more developed; and so are Political Economy, History, and Natural History. Moreover, the list contains more than twice as much instruction as the old prescribed curriculum could hold, and the grade of all the instruction is distinctly higher. The courses in the above list which are most thronged are those in English, and in the most elementary German, the first and second courses in French of college grade, the elementary courses in Philosophy and Economics, the History courses including the History of the Fine Arts, and the elementary courses in Chemistry, Botany, Zoölogy, and Geology.

The subjects on this list are those which a college of moderate size with a Faculty of sixteen to twenty working mem-

bers, may most wisely teach, and about to the extent suggested in the list; for these are the subjects which large numbers of young men desire to pursue in college, following the subjects which they have pursued at school. These are the courses which may be most economically provided by any institution to the greatest satisfaction of the largest numbers. They can be constantly given year after year without much change, and so make but a moderate draught on the teachers who give them. The amount of instruction on the list may be roughly computed to be about one-eighth of the total amount of instruction offered by Harvard College; but this eighth meets the chief wants of the great majority of the students, and the other seven-eighths, although indispensable for an institution with the resources and aims of Harvard College, are really provided at great cost, first to meet the intellectual wants of a comparatively small but precious minority, and secondly to meet the higher part of the needs of the great majority, — higher needs which are few in comparison with the number of their lower needs.

This list of subjects also sheds some light on an educational question now under discussion — the question of the most natural and the most needed additions to the existing programmes of secondary schools. It suggests that in endeavoring to enrich the programmes of secondary schools, and thereby to carry into schools subjects now dealt with by colleges, the selection of the new subjects should be made from the most elementary and most attractive courses named above. In successive annual reports the distribution among the College classes of the young men who have chosen the courses mentioned has been given with precision, and from this distribution it appears that the younger students choose English, French, German, History, and Natural Science in larger proportion, and the older students Philosophy, Economics, and Ethics. The indication therefore is that English, French, German, History, and Natural Science are the topics which might be most judiciously added to the Latin, Greek, and Mathematics, which are already well developed in the best schools. Much of the elementary instruction which is now given in college in the five subjects named ought to be given

in high schools and academies, being entirely appropriate to the average age of pupils in the two upper classes of good secondary schools.

A table of the schools and colleges from which young men have entered Harvard College proper during the past ten years will be found in the Appendix (pp. 263-270). In 1895, 142 schools and colleges and a few private tutors contributed the 511 persons who entered all the classes of the College taken together. This large number of feeding institutions accounts for the diversities of preparation for college work which the new-comers to the College exhibit. Harvard College is not fed by a few schools, the curricula of which it controls, but by a great variety of institutions scattered widely over the country, in many of which the function of preparing boys for college is only a subordinate one. Only eleven schools (three public, six endowed, and two private) sent more than six pupils each, and from these eleven schools, 187 persons entered the College, or about four-elevenths of the whole number that entered. The number of public schools which from time to time send some of their pupils to Harvard College, is increasing — a sign of diffused improvement in secondary education.

In the ten years 1876—1885 there were 82 such schools.

“	“	1881—1890	“	96	“
“	“	1886—1895	“	132	“

In 1890, 34 public schools (of which 24 were Massachusetts high or Latin schools) sent pupils to the College. In 1895, 55 public schools (of which 36 were Massachusetts high or Latin schools) sent pupils to the College. Of the other 19 public schools, 6 were in New England, and 13 outside of New England.

The table on p. 11 gives the number of young men who entered Harvard College as regular students in any one of the four classes (special students are not included), in each of the twenty-five years mentioned, from public, endowed, and private schools, from private tuition, and from colleges respectively, with the total number in each year and the percentage from public schools. The percentage from public schools shows a tendency to diminish for six years from 1871—1876 inclusive.

Year.	From Public Schools.	From Endowed Schools.*	From Private Schools.*	Private Pupils.*	From Colleges, including other Harvard Departments.†	Total.	Percentage from Public Schools.
1871	70	44	42	39	8	203	.3448
1872	50	66	30	30	7	183	.2732
1873	72	66	37	46	6	227	.3171
1874	54	57	25	46	18	200	.2700
1875	80	79	32	53	14	258	.3100
1876	51	75	35	49	15	225	.2266
1877	86	64	31	46	12	239	.3598
1878	80	74	36	28	14	232	.3448
1879	72	72	47	38	16	245	.2938
1880	69	67	41	42	14	233	.2961
1881	69	65	25	48	23	230	.3000
1882	82	70	51	53	25	281	.2918
1883	65	85	62	36	20	268	.2425
1884	63	75	73	37	38	286	.2203
1885	73	71	63	30	27	264	.2765
1886	96	65	70	36	35	302	.3179
1887	78	78	78	33	43	310	.2516
1888	94	77	69	31	60	331	.2840
1889	98	68	99	33	54	352	.2756
1890	95	86	82	54	85	402	.2363
1891	128	53	147	31	104	463	.2764
1892	135	109	116	37	109	506	.2667
1893	142	111	133	20	83	469	.3037
1894	126	106	114	30	94	470	.2695
1895	165	119	114	34	79	511	.3228

For the next six years it averaged a little higher, but then fell off again. During the last five years, and particularly in the year 1895, it exhibits some improvement. The number from endowed schools has been very steady for the past four years; while the number coming from colleges has diminished, because during this period the tendency has been for persons holding degrees to enter the Graduate School direct.

A table which shows the ages at which the Freshmen entered the College in every year from 1856 to 1895 inclusive,

* The discrimination between endowed schools and private schools and between schools and private tutors cannot be made perfectly accurate.

† Beginning in the year 1881, students have each year entered the regular classes of Harvard College from other departments of the University.

is printed in the Appendix (p. 271). Persons who entered with advanced standing are included in the table by placing them in the year in which they would have entered the College had they begun as Freshmen. The last three years of the table are therefore necessarily incomplete, for persons who hereafter enter with advanced standing are still to be incorporated into those classes. It will be noticed that this insertion of persons who enter with advanced standing raises the average age, these persons being often somewhat belated as regards their education. The highest average age in the table is presented by the class which entered in 1889, this class having contained an unusual number of men over 22 years of age when they entered constructively as Freshmen. Since that time there has been a distinct diminution in the average age, this diminution being caused in good measure by decrease in the number of abnormally old persons admitted. In 1890 the Corporation, Board of Overseers, and Faculty were all of opinion that the average age of admission to the Freshman Class was undesirably high, and a public circular was issued by the Faculty which stated their belief "that boys who have regularly attended good schools ought to be fully prepared to enter with profit upon their college course by the time they are eighteen years old, or even before that age," and requested the coöperation of all teachers who prepared boys for Harvard College in the effort to reduce the average age of admission. This circular has perhaps begun to bear fruit; but much still remains to be done, for four-elevenths of the Freshmen admitted in 1895 were nineteen years of age or more.

The first Committee on the Regulation of Athletic Sports was appointed in 1882, and consisted of three members of the Faculty, including the Director of the Hemenway Gymnasium. During the first year and a half of its service, it had the assistance of two members of the Corporation. Previous to that time, the Faculty as a body had attempted to regulate these sports. The Committee in this form served three years (1882-1885). It then proposed to the Faculty the appointment of a modified Committee, to consist of the Director of the Gymnasium, a physician resident in Boston or Cambridge, a

recent graduate interested in athletic sports, and two undergraduates to be chosen from among the leaders in these sports. The Faculty adopted this proposal, and the Committee in this new form served for three years. Like the preceding Committee, it underwent but few changes in membership. In the spring of 1888, on the suggestion of the Board of Overseers, and in general accordance with a plan prepared by the College Faculty, the constitution of the Committee was again altered; and its present form was given to it. Since 1888, the Committee has consisted of three Faculty members, three graduates of the College — these six members being appointed by the Corporation and Board of Overseers — and three undergraduates, chosen by the presidents of the three upper classes and representatives of the principal athletic organizations, one representative from each organization. Since 1888, the Committee on the Regulation of Athletic Sports has, therefore, been an independent body, and not a committee of any academic board. It is subject, however, to the authority of the Faculty of Arts and Sciences as defined in the Statutes, a subjection the limits of which are undefined. The personal constitution of this Committee has, in seven years, undergone considerable changes. It has had four chairmen; the Faculty members have all been changed; the original undergraduate members have been necessarily replaced; and of the graduate members — who have proved to be the most permanent — only one gentleman has served continuously from the beginning. The authority of the first two committees was limited by votes of the Faculty. When the Corporation and Overseers adopted the standing vote which determined the constitution of the third Committee, they also expressed the opinion that further restrictions should be placed upon intercollegiate contests. This Committee has received no absolute directions from the Faculty; but in the spring of 1895, the Faculty adopted a vote (February 19) “that the Faculty desire the Committee on Athletics to put a stop to all intercollegiate foot-ball contests.” Thereupon the Committee sent a communication to the Faculty, giving reasons for not prohibiting intercollegiate foot-ball immediately. On the 19th of March, the Faculty adopted the following vote: — “The Faculty, having received

and considered a communication from the Committee on the Regulation of Athletic Sports, dated February 25th, 1895, remain of the opinion that no student under their charge should be permitted to take part in intercollegiate foot-ball contests"; but on the 7th of May, a resolution "that the Faculty of Arts and Sciences will not allow a student under their charge to take part in any intercollegiate foot-ball contest" was lost by a decisive vote; so that the Committee remained free to follow their own judgment.

Before the year 1882, the Faculty was in the habit of acting from time to time on the petitions of the various athletic organizations for liberty to make this or that extension of athletic sports, the only standing regulation being the following:—"Contests in Cambridge shall not begin until after the last recitation on Saturday, or before four o'clock on other days." The Committee first appointed in 1882 promptly adopted a rule to the effect that all candidates for teams or crews must pass a satisfactory physical examination by the Director of the Gymnasium before taking part in any contest.* This rule, although of the most obvious necessity, was resisted by the students, and by many of the younger graduates who were their advisers. Regulations were also adopted to the effect that no College club or association should play or compete with professionals, that no one should be allowed to join a crew unless he knew how to swim, that all games out of Cambridge should be played on Saturday, and that no person should assume the functions of trainer or instructor in athletics on the grounds or within the buildings of the University, without authority in writing from the Committee. Not one of these regulations would have been adopted or enforced by the undergraduates of that time. The Committee, however, steadily tried to secure the coöperation of the undergraduates, and in this effort had some degree of success.

In 1883 the Committee tried to limit College games to College grounds, to exclude professionals, and to limit to four years the eligibility of students for teams and crews; but at conferences called by the Committee to bring about these and other

* This rule was adopted by the University of Pennsylvania in December, 1893.

reforms, and attended by thirteen colleges, the attempt at intercollegiate control failed. In its first report to the Faculty, made in January, 1883, the Committee recommended that there should be attached to the staff of the Hemenway Gymnasium, an assistant in the Department of Physical Training, qualified to advise the students as to the best modes of training and practice in field sports, and to be paid by the College. In 1884 the Corporation made a suitable appointment to this position, which has proved to be a permanent addition to the staff of the department.

The evils of football now became so great that the Faculty in January, 1885, prohibited all intercollegiate football games. This prohibition was maintained for one year.

The second Athletic Committee (1885-88) contained two undergraduates. During the three years of their service the evils of athletic sports were developed rapidly, and the Committee were constantly struggling to enforce adequately regulations already adopted by the first Committee. The undergraduate members proved to be conservative on questions of general policy, and to be valuable coadjutors in the work of the Committee. In spite of the efforts of the Committee, the number of public athletic contests steadily increased from year to year, and the evils connected with them also increased; because no coöperation among the colleges concerned could be obtained, and no single college could effectually cope single-handed with these evils. In 1887 a valuable regulation, originally made by the Faculty, was adopted by the Committee, that no dismissed or suspended student and no student on probation should be allowed to play on any team or row in any crew. In May, 1888, the Board of Overseers expressed a decided opinion that intercollegiate contests should be limited to New England, and that University teams alone should take part in them. It was in this year that the Committee in its third and present form began to regulate athletic sports. For several years past the amount of money received at the principal contests had been rapidly increasing, because of larger attendance and higher prices, and had reached many thousands of dollars a year. This money had been all received and expended by undergraduates, with no proper accounting or sense of responsi-

bility. The first effort of the Committee towards the correction of this evil was to procure in 1887, with the cooperation of the undergraduate organizations, the appointment of an auditing committee, the chairman of which was an influential professor. Although this committee had no authority, it did good, because it brought to light the wasteful and loose expenditure which custom sanctioned, and the absence of proper accounts and vouchers. As a result of its published reports the office of Graduate Treasurer, so-called, was created in 1889; but the Treasurer's duty was supervisory and advisory only — he had no direct control of the money received and expended. In the same year the rule was made that all schedules of games must be approved by the Committee. This rule, with the older rule that all games out of Cambridge must be played on Saturday, diminished considerably the number of games played away from Cambridge. In November, 1889, the Committee laid down a much-needed definition of a Freshman — a member of the Freshman Class of the Academic or Scientific department in his first year of residence, or a first-year special student in one of these departments. They also declared that no student should play on a Freshman team who had passed more than one year in any university.

In December, 1889, after full discussion by representative graduates and undergraduates, and by the foot-ball and baseball associations, the Athletic Committee adopted two rules on eligibility which prevented men from playing who were not *bonâ fide* students or not amateurs.* These rules are the first and fourth on the athlete's certificate of eligibility, which will be found in full in the Appendix (p. 272). They expressed clearly the substance of two much-needed reforms; but for several years they were enforced with much difficulty against constant resistance, and naturally at first without complete success. They were reaffirmed by the Athletic Committee in 1893.

In March, 1893, the Athletic Committee voted "That no regular student in the College or Scientific School who had ever played on a class or university team at another college,

* Both these rules were adopted by the University of Pennsylvania in December, 1893. Yale University published similar rules in September, 1894; but the substance of the second one had been previously in force.

no special student, and no student in a professional school should play upon a Harvard team until he had resided one academic year at the University and passed the annual examinations at the end of the year, the rule to take effect January 1, 1894." This was a very wholesome innovation.*

At the same time the Committee determined that "a student who is dropped for neglect of his studies into a lower class shall be debarred from taking part in any intercollegiate contests until the end of the next academic year, or until he produces a Faculty certificate that he has made up all the deficiencies which stand in the way of his restoration to his original class."†

In June, 1893, the real office of Graduate Treasurer was created. This new officer receives all moneys, makes all disbursements, and concludes all contracts. He is responsible to the Athletic Committee, and makes an annual report.

By a vote of June 17, 1893, players in arrears at the end of the season for training-table bills were excluded from future contests until arrears were paid. The meaning of this regulation was this: The training-tables being more expensive than the ordinary tables, a member of the crew, or of a team, on going to a training-table was expected to pay whatever he had previously been paying, the excess being paid from gate-money. Many players postponed this payment unreasonably, and a few wholly neglected to pay to the training-table the price which they had previously been paying; so that their whole board had to be defrayed from the gate-money. The above regulation having proved ineffective, the Graduate Treasurer was directed by the Committee in June, 1895, not to admit any player to the training-table unless he made a cash deposit, or furnished a satisfactory bond, to cover the whole season's training-table board. This regulation put an end to what had long been a crying evil.

In 1895 the Committee voted that foot-ball games are to take place on the home grounds of one of the competitors. In the

* It was adopted by the University of Pennsylvania in December, 1893, and by Yale University in February, 1894.

† This rule was adopted by the University of Pennsylvania in December, 1893, and by Yale University in February, 1894.

same year the Committee determined that the number of seats on the athletic grounds in Cambridge should be limited to 10,000, and that tickets to the important games should be sold only to students, graduates, and their friends.

Finally, an important rule has been adopted to the effect that no student, whether he has represented one college or more than one, shall take part in intercollegiate contests for more than four years, and this period shall begin with the year in which he first represented any college as a player upon a college team. In reckoning these four years, every kind of sport is counted. A player cannot play baseball four years, and then football four years, or even one year, more.

All the rules governing eligibility are printed on a Certificate of Eligibility (Appendix p. 272), and every student makes a declaration over his own name that he is a *bonâ fide* student and an amateur, and is eligible in all respects according to the letter and spirit of the rules.

It will be observed that the various rules adopted within the past thirteen years by the Athletic Committee have had several different objects in view, — (1) to secure the physical safety of the players so far as possible; (2) to keep the players up to a minimum, at least, of college work; (3) to reduce the number of contests, and to prevent contests in Cambridge from interfering with the work of the College; (4) to preserve the college character of the contests themselves and of the training therefor; (5) to exclude all players who are not genuine students and amateurs; (6) to procure a proper use of the money derived from the sports. The services of the Committee in these directions have been of great value, although it must be confessed that much of the work which they have been compelled to do would have been unnecessary in any community which possessed sound sporting traditions. Thus in the early years of the Committee constant efforts had to be made to keep professional players out of college sports, and these efforts were resisted and derided for years by students, graduates, and the public press, until experience proved their wisdom. Long ago it appeared clearly that the highly competitive sports were assuming an importance in the public mind, and developing evils both physical and moral, which

made it impossible, in the judgment of the government of Harvard University, to leave them to the management of the the undergraduates only. From the beginning it has been the object of the Faculty and of the Athletic Committee, not to cripple or abolish the competitive sports, but to have them conducted with moderation and honesty, and in a generous temper. The sports which have intercollegiate interest affect strongly the physical welfare, the manners, and the morals of the students who take part in them, or who aspire to take part in them. They tend naturally to excesses which are grave evils from every point of view. In the judgment of all the authorities of Harvard University — Corporation, Overseers, and Faculties — they require at all American universities and colleges steady and watchful control, such as the Harvard Committee on the Regulation of Athletic Sports has exercised since 1882. It has now become obvious that the great majority of intelligent people in this country are of this opinion, and that judicious parents are likely to make the opinion felt.

At the close of the year Professor Dunbar, Dean of the Faculty of Arts and Sciences, found it necessary to ask leave of absence on account of the state of his health. He had been absent by reason of illness since the preceding February, and knowing well the urgency of many of the duties of the Dean of the Faculty of Arts and Sciences he felt obliged to resign that office, which he had held since 1890, the date at which the Faculty of Arts and Sciences replaced the Faculties of Harvard College and the Lawrence Scientific School. Professor Dunbar had rendered the most valuable services in this new office, and commanded in the highest degree the confidence of all the University Boards; but the Corporation felt obliged to accept his resignation, though it was with great regret. Professor James M. Peirce was chosen his successor, and has prepared the report upon the action of the Faculty of Arts and Sciences during the year 1894-95 (p. 48).

The membership of the Faculty has been increased by two,—three members having left the service of the University, and five new members having been added.

The list of courses of instruction gives, as usual, the number of persons attending each course, and the distribution of that number among the various classes of students, and is in itself a very complete exhibit of the work of the Faculty.

The Faculty entered on the consideration of two important subjects,—namely, the forms and grounds of the degrees of Bachelor and Master of Arts, and the requirements for admission to College. These two difficult subjects are still under discussion, the first in the Faculty, and the second in the several departments and by a large committee.

The Dean calls attention in a brief paragraph (p. 76) to the fact that in the courses intended primarily for undergraduates the amount of change from year to year is relatively small, while the list of more advanced courses is constantly undergoing important modifications, many courses being every year replaced by new ones or by alternating courses, and the subject-matter of other courses being much altered. The substance of elementary courses undergoes comparatively little change from year to year, and it is chiefly for the refreshment of the instructor that they are varied. In the advanced courses the progress of knowledge and the fresh aspects of literature necessitate incessant modifications. The elementary courses may be substantially repeated from year to year—the advanced courses cannot be. The effect of these facts—so plain when once stated—on the mental attitude of University teachers towards their subjects and their work is profound.

The Dean of the College gives in his report (pp. 81–84) an account of the class of special students which has now become a permanent element in Harvard College. He points out that the establishment of the Faculty's Committee on Special Students, which was intended not only to determine their admission, case by case, but also to regulate their choice of studies and to supervise their work in College, led to the appointment of the Committee of Advisers for Freshmen—a Committee which now seems an indispensable part of the College administration. He also shows how the Special Student Committee devised a method of inquiry about new-comers, which has been

adopted by the College, replacing with great advantage the certificate of moral character formerly presented by candidates for admission. This method has now demonstrated its efficacy, and should be adopted by the other departments of the University. The class of special students is not one of long residence. About half of them remain not more than one year; but as the Dean points out, taken together they do as honest work as the members of any College class, and need no longer be looked on with suspicion. "The body of Special Students may already point out among its members men worth all the labor expended on them." (p. 83)

The Dean also points out that personal interest of instructors in students is strong and effective in Harvard College notwithstanding its size. The unusually large proportion of teachers to students (about 1 to 12) makes personal care for individuals the rule and not the exception. The whole method of the College is intended to minister to individual needs, through the elective system, and the adoption of individual modes of instruction.

Of the 364 persons who received the degree of Bachelor of Arts last June, 13 per cent. were not registered as Seniors during the year 1894-95. 47 students of excellent quality received the degree as members of the Graduate School, or of the Junior Class, or in some other mode not involving the passing of a year in Harvard College as a Senior.

The Freshman Class which entered in the summer of 1895 is the largest in the history of the College, numbering 462 persons, only 17 of whom were men dropped from a higher class.

In 1894-95 the Scientific School made a gain of ten per cent. in numbers, but a much more important gain in the proportion of regular students to special students (p. 97). In the preceding year the special students had been nearly equal in number to the regular students. In the year 1894-95 they were only one-half the number of the regular students. The proportion of special students is still further reduced in the current year.

The School was forced to spend considerable sums of money for new equipment, particularly in the departments of Engin-

eering and Architecture. \$20,000 were spent on apparatus, books, repairs and improvements, tools, and supplies imperatively needed in the work of instruction. These expenditures exhausted the reserve of the School, and left it in debt to the general Treasury to the amount of \$9,974.43. The drawing-rooms and laboratories of the departments of Architecture and Engineering are now well equipped, and they are spacious enough for the present number of students.

The Faculty of Arts and Sciences has entered upon a revision of the requirements for admission, which will doubtless include in its scope both Harvard College and the Scientific School.

Professor James M. Peirce presents (p. 101) his last report as Dean of the Graduate School. As Secretary of the Academic Council and as Dean he has been the executive officer of the Graduate School since it was first established in January, 1872. At first there was not much daily work to be done for the department; but abiding faith in its possibilities was needed, and a firm resistance to adverse influences. As years went on, it was Professor Peirce who discerned the obstacles in the path of the School, and recommended the steps by which those obstacles were overcome. In recent years a great deal of labor has been required of the Dean in conducting the affairs of the department, as well as wisdom in guiding it. The Graduate School under Professor Peirce's care has become not only a strong and growing branch of the University, but a potent influence throughout the whole department of Arts and Sciences. Its effect on Harvard College and the Lawrence Scientific School has been both broadening and invigorating, its influence having been exerted first on the teachers and next on the whole body of students. Some of the difficulties which have arisen in the administration of the School, and some of the problems still to be solved, are described in the present report, pages 103-105.

The chief concern at the beginning was to set wisely the standards for the degrees of Master of Arts, Doctor of Philosophy, and Doctor of Science. In the course of twenty-three years this work has been satisfactorily accomplished. The standards of the several degrees are now well established, and

may be counted on as secure for the future. Some adjustments have still to be made in regard to the rules concerning residence. It is the opinion of Professor Peirce, and of most of the gentlemen who have had much to do with the development of the department, that it is expedient to promote migration of advanced students from one university to another. The practice has been begun by the students themselves, although under unfavorable conditions. It is now time that the conditions were made favorable; and to this end it is desirable that the only prescription about residence should be that of the general Statutes—not less than one year's residence for every ordinary degree.

Professor Peirce suggests that the degree of Doctor of Science might now be abolished, the degree of Doctor of Philosophy being opened to all to whom the degree of Doctor of Science is now open. This suggestion leads logically to another which Professor Peirce does not express,—namely, that the degree of Bachelor of Arts might be given to all those who are now eligible to the degree of Bachelor of Science. The difficulty which both these proposals must encounter is the present low standard of requirements for admission to the Lawrence Scientific School. Until Harvard College and the Lawrence Scientific School have equivalent requirements for admission, it can hardly be expected that the graduates of the two departments should be eligible for the same degrees.

The attention of the Overseers is invited to the present occupations of the gentlemen who received the degree of Doctor of Philosophy or Doctor of Science at the last Commencement (see pages 114–116). The list must convince anyone that the influence of the Graduate School is likely to be widely diffused through its graduates.

The assignment of fellowships and scholarships in the Graduate School is a task of great difficulty, on account of the large number of meritorious applicants. The tables printed by Professor Peirce on this subject (pages 120, 121) give all possible information concerning the manner in which this task is performed. Graduates and undergraduates of other institutions, with a few non-graduates, get nearly two-thirds of the awards.

At the instance of the Faculty of Arts and Sciences the Corporation adopted a rule that the acceptance of an instructorship or assistantship by a student already holding a fellowship or scholarship, or of a fellowship or scholarship by a student already holding an instructorship or assistantship, shall be held to vacate the place first held, unless the Corporation give express permission to hold both places. The object of this rule is to distribute the various aids to as large a number of beneficiaries as possible.

The Corporation began on a small scale to try an experiment which may have far-reaching results. They appointed two distinguished students in the Graduate School to fellowships without stipend, and gave them the title of John Harvard Fellow. It is hoped that the institution of these fellowships will offer acceptable distinctions to young men of high scholarship who have no need of pecuniary aid, and will add to the dignity of the ordinary fellowship with stipend. It is obvious that this principle might be utilized in all departments of the University, — that, for example, John Harvard scholars might be appointed in Harvard College.

On the resignation of Professor James M. Peirce, the Corporation and Overseers elected Professor John Henry Wright Dean of the Graduate School.

The Divinity School had, in the year 1894-95, the largest number of students that it has ever had in the whole course of its history; and all were graduates of some college or professional school, except two special students, not candidates for the degree, who were admitted on examination. Nineteen colleges and universities were represented in the membership, and seven theological schools, of which only one was Unitarian. The students of Unitarian affiliations were in a minority in the School.

The Dean reports (p. 135), that of the 64 men who have graduated at the School within the past fifteen years and are now living, 55 have parishes, one is a professor in the Meadville Theological School, three never entered the profession, one has withdrawn from it, and two are candidates for settlement — one of whom graduated only last summer — while the present

positions of two graduates are unknown. These last two are Japanese. It appears, therefore, that the undenominational character of the School has not prevented its graduates from getting positions as ministers. Furthermore, during the past three years, 34 students have been connected with the School as resident graduates. Of these men, 32, including all those of Evangelical opinions, are now established in their profession. One is connected with a charitable institution, and one has never been a candidate for settlement. Of these 32 settled ministers, 12 are in Trinitarian Congregational churches, 10 in Unitarian churches, 5 in Methodist churches, 2 in Episcopal, 2 in Presbyterian, and 1 in a Baptist church. These figures show that connection with this School does not delay or impede settlement in the ministry of any of the denominations represented. The facts seem to indicate, first, that an undenominational school of theology may succeed in supplying pulpits in many denominations; secondly, that there is room for a different kind of theological seminary from the ordinary sectarian seminaries; and thirdly, that a theological department, conducted on scientific principles, may be a consistent and altogether desirable branch of a free university.

The Library of the School, a very important adjunct in its work, increases steadily and improves in quality. It is safely housed and well cared for.

It is desirable that the Alumni Association of the School should be quickened and reorganized, that it may come to represent accurately the present constitution of the School. To this end, it is desirable that the complete catalogue of the graduates and students of the School, begun some years ago by the Alumni Association, should be promptly completed. In twenty-five years more, the Alumni Association of this School should be a very characteristic and interesting body of men.

The School continues to disparage its own instruction and discipline by charging a tuition-fee which is only one-third of the tuition-fee in the other Cambridge departments of the University. The President reiterates the opinion he has previously expressed that this relic of the indiscriminate eleemosynary system in theological education should be done away with.

The Harvard Law School Association celebrated last June the end of Professor Langdell's twenty-five years of continuous service as Professor and Dean. The former members of the School assembled in large numbers, and the whole occasion was a worthy commemoration of Professor Langdell's great services to the School and the profession.

Professor Langdell's administration has been remarkable for four things: First, for the invention and adoption of a new method of teaching Law; second, for the adoption of a new mode of training teachers of Law; third, for a great, though gradual elevation of the standard of the degree in Law; and fourth, for success in regard to number of students, increase of endowment, improvement of equipment, and income from tuition-fees.

In 1892-93 the Law Faculty adopted the rule that after the year 1895-96 the members of the regular classes in the Law School must all have obtained before they entered the School a respectable degree in Arts, Literature, Philosophy or Science. Notice of this legislation was first given in 1893. They had already announced in the previous year that special students must pass a satisfactory examination in Latin, French, and Blackstone's Commentaries, unless they hold an academic degree not recognized by the School as qualifying for admission to the regular classes, or a Law degree conferred by a school which insists on an examination upon a two years' course of study. Special students thus admitted who shall reside three years in the School and pass in due course the regular examinations may, however, receive the degree of LL.B., (1) if they at any time during the course entitle themselves to enrollment as regular students, or (2) if they attain a mark within five per cent. of that required for the degree *cum laude*.

The report of the Dean of the School (p. 145) gives interesting statistics concerning the percentage of college graduates in the School in the years since 1870. In 1893-94 the percentage was 76, and in 1894-95 it was 75; but this year, 1895-96, it has risen to 80 per cent., and if 18 Harvard College Seniors who are registered in the Law School, because they have anticipated nearly all the work of their Senior year in College, are

included in the reckoning, the percentage of college graduates is this year 84 per cent. (p. 145). Of the new entries into the School in 1894-95, 32 per cent. were non-graduates, in 1895-96 only 22½ per cent. The influence of the legislation which required of all candidates for the regular classes a previous academic degree was therefore immediate, although it is not to go into effect until the end of the year now current. Persons who held academic degrees saw in advance that the Harvard Law School was going to be a good place for them, and non-graduates saw that for them it was not likely to be congenial. The decrease in the number of students caused by the execution of this legislation next year is therefore not likely to be large. Against any temporary decrease in tuition-fees the School has made ample provision by laying up surpluses of successive years to the amount of \$112,004.08, all of which reserve will be available for use in any period of temporary depression.

Two tables in the Dean's report (pp. 145-146) bring out clearly the sudden increase in the resort of graduates of other colleges to the Law School which took place in 1891-92.

The Medical School is highly prosperous as regards the number of its students; but, owing to the additional instruction required by the new fourth year in the course for the Medical degree, and to the great development of costly laboratory instruction, the income for the School has for two years fallen short of its expenses. Physiology, Histology, Pharmacology, Bacteriology, and Pathology have all needed expensive enlargements. The building has also required some not inconsiderable repairs and improvements. To provide against such demands for enlargements and improvements the School laid by annual surpluses for several years, so that it had on August 1st, 1893, a reserve of \$89,061.85 against which to charge unavoidable deficits.

The School has taken an active part in developing the new bacteriological methods by which diphtheria may be distinguished from other throat affections of similar appearance. The importance of the summer courses and the graduate courses given by the School gradually increases. Early in the year

the Faculty voted to admit women graduates in medicine to the graduate courses of the School, at the discretion of the several instructors in charge of such courses, provided that the rules of the hospitals in which clinical instruction is given be observed.

The lot of the poorer medical students would be much ameliorated if the School possessed one or more dormitories, and a dining-hall conducted on the principles of the Foxcroft Club at Cambridge. Medical students suffer more than any other class of students from unsanitary lodgings and poor food; because such bad conditions render them more liable to contract some of the contagious or epidemic diseases to which they are often exposed.

An announcement of the Dental School appeared in the annual Catalogue of 1868-69, but without students, because the instruction did not begin until November 1st. The next year's Catalogue showed that the School had had sixteen students in 1868-69. There was no examination for admission, and the amount of residence required for the degree was attendance at two lecture-courses of four months each, for the first of which might be substituted attendance at one course of lectures in any respectable Dental or Medical College, or five years' reputable practice. The School is not mentioned in the Treasurer's Statement until 1871-72, in which year its receipts were \$1198.67 and its expenses \$1357.67, and it was in debt to the Treasury \$15,159 for a house which had been bought for its use. At the start, and for many years, all the professors gave their services to the School. In contrast with these conditions it is satisfactory to place the state of the School in 1894-95. It had 80 students divided into three classes, an admission examination, a graded course of instruction covering three years of nine months each, 31 instructors, all of whom received some compensation, and funds in the Treasury to the amount of \$42,304.49. It allowed no substitute whatever for the instruction and examinations of the School, except to graduates of other Dental Schools by special vote of the Faculty. This is the progress in which Dr. Chandler, the late Dean of the School, had part, and took profound satisfaction.

During Dr. Chandler's long illness, much of the work of the Dean was efficiently performed at personal sacrifice by Professor Fillebrown; and for this service the Corporation and Faculty are under great obligations to him.

Late in December in the current year Professor Eugene H. Smith was chosen Dean of the Dental Faculty, and in that capacity he presents a brief report on the Dental School in 1894-95 (p. 162).

Two events of importance occurred at the Bussey Institution during the year. The first was the death of Mr. Motley, Instructor in Farming, who had served the Institution in this capacity ever since it was first organized in 1870. No appointment was made to fill the vacancy; but the teaching of Technical Agriculture was continued by the Superintendent of the Farm, Mr. Edmund Hersey.

The second event was the filling of the long vacant Professorship of Applied Zoölogy by the appointment in the spring of 1895, of Theobald Smith, M.D. The only previous occupant of this professorship is Daniel Denison Slade, M.D., who held it from 1871 to 1882. The duties of the new professor illustrate the rapid changes which have taken place in the subject of Applied Zoölogy since 1871. One of Professor Smith's principal subjects is Bacteriology and its applications, a subject not thought of when Dr. Slade was appointed to the same professorship. By agreement with the State Board of Health, Professor Smith will give most of his time to the work of that Board, the Bussey Institution supplying laboratories, assistants, and a portion of Professor Smith's salary. His time has thus far been given to the prosecution of pathological and biological work in connection with the State Board of Health.

During three years past there have been more students at the Bussey Institution than formerly. Mr. Jack's Arboretum classes in the spring and fall have been well attended.

Under the will of Benjamin Bussey, on the death of Mrs. Motley certain payments became due to her children; but this diminution in the principal of the Bussey Trust is more than offset by the simultaneous reduction in the amount of annuities to be paid.

The classes in the Veterinary School increase in number and improve in quality. In December, 1894, the President and Fellows raised the tuition-fee from \$100 to \$150, and abolished the separate fees for matriculation and graduation. This increase in the fee may perhaps have caused the slight falling off in attendance which was observable at the beginning of the current year; but the decrease was slight, and the income from tuition-fees during the year will be larger than it was in the preceding year.

The clinical opportunities of the students have been increased through the connection of members of the Faculty with the State Board of Cattle Commissioners; for the students have had opportunity to be present at the autopsies of all animals destroyed by order of the Board. The clinical opportunities afforded by the School are, however, insufficient; because the Hospital is not large enough to afford an adequate variety of cases. When the School was first established it was supposed that a free clinic for animals could be maintained; but the building has always been inadequate for this purpose, and the pecuniary resources of the School have also been insufficient. Through the generosity of the members of the Visiting Committee of the Department, a building suitable for this much-needed free clinic has just been put at the disposal of the School for three years. These new opportunities for students will be available before the middle of the current year.

The Hospital earnings declined somewhat in the year 1894-95 as a whole; but in the latter part of the year they were very good. During the first three months of the current year they were larger than ever before. The Director of the Hospital points out that a dog infirmary, with tile floors and separate iron-cages, is much needed. The number of dogs and other small animals treated at the Hospital has increased rapidly for the last seven years (see p. 169), and is now double what it was in the year 1888-89.

Surgical operations are performed at the Hospital every week-day from eleven to one; and such operations numbered during the past year 645.

In the twelve years since the Veterinary Department was established the subject of Comparative Medicine has assumed

great importance, the scientific and the humanitarian aspects of the subject having alike broadened. It has become clear that an adequate Veterinary Department should contain, like a good Medical School, well-equipped laboratories for Pathology and Bacteriology, at the head of which men of the highest scientific capacity should be placed — men not engaged in veterinary practice, but exclusively devoted to teaching and research.

In the Report on the Library for the year 1893-94 it was mentioned that 15,000 volumes in Gore Hall had been boxed and piled up in the cellar of Appleton Chapel to make room for new books. In December, 1894, these books, which related chiefly to theology, were moved to the Library of the Divinity School, and there made accessible.

In the spring of 1895 a contract was made with Messrs. Norcross Bros. to take out the whole interior of Gore Hall, put on a new roof with large skylights, build an iron stack three stories high starting from the cemented floor of the cellar, and finish a temporary reading-room in the upper part of the building above this three-story stack. The resources on which the Corporation relied to carry out this contract were three in number: The first was the subscription raised among the undergraduates and graduates of the College in the year 1890-91 for the purpose of improving the Library accommodations. The paid-in subscriptions, with some interest thereon, amounted to \$15,730.77 on the 1st of August, 1895. Permission was obtained from the subscribers to use this money for the improvement of Gore Hall. The second was the Gore Annuity Fund, which amounted on the 1st of August, 1895, to \$28,909.10, and was then chargeable with only a single annuity of \$300. Thirdly, the Corporation counted upon a considerable surplus of receipts over expenses for 1894-95 in the comprehensive account called University, College, and Library. After including among the expenses of the year \$2,150.27 paid before August 1st on account of the Gore Hall contract, this surplus turned out to be \$22,239.55, and was at once appropriated for the alterations of Gore Hall. It is supposed that the improvements will cost about \$50,000. It is not probable that the Gore Annuity Fund will be reduced

below \$18,000 ; so that this sum will remain to be used, with its accumulations during eight or ten years more, to finish the upper stories of the new stack, whenever a proper reading-room is provided for the University. The merits of the plan which the Corporation has now carried out are,—first, that Gore Hall, which previously contained a great deal of wooden construction, is now rendered thoroughly fire-proof; and secondly, that the three-story stack will hold about 220,000 volumes, and the reading-room 8,000–10,000 more; whereas, before this alteration, Gore Hall held only about 100,000 volumes, its capacity having been reduced by removing shelving to make room for tables and readers. This increase of shelf-room will permit the immediate classification of the whole Library on the same principles which have been followed in the stack built in 1876, and will moreover provide room for the accessions of books for the next eight or ten years at the present annual rate of increase. In the space now to be used as a reading-room four more stories of stack can ultimately be built, and these stories will have nearly the capacity of the three stories now built. All the work done now will be of permanent value, except the thin wooden floor and the furniture of the temporary reading-room. In the new reading-room there are at least 250 seats, with corresponding table-room. It should be clearly understood, however, that so far as the reading-room is concerned, the present arrangement is merely a provisional make-shift. The whole building will be hereafter lighted by electric lights, so that it can be used in the evening, or, at least, till 6 P.M. Some of the book-shelves in the delivery-room have been removed, to make more room about the public card-catalogues and the delivery-desk.

To get ready for the new constructions, about 60,000 volumes from Gore Hall were carried last May to the basement of Perkins Hall as a place of temporary storage, and in June, after the examinations were over, the periodicals and the reference and reserved books, that have been kept in and near the Gore Hall reading-room, were arranged in the lower story of Massachusetts Hall, which was thus made a temporary reading-room while the changes in the Library were going on.

The Librarian calls attention to the fact that regular symmetrical growth cannot be secured by the method for many years in operation in the Library, — the method, namely, of relying chiefly in ordering books on the suggestions received from a large number of professors for purchases in their respective departments. In a long period of time, such as fifty years, for example, a tolerably symmetrical development might be procured in this manner; but in any short period the development will be found to be unsymmetrical, because of the very different amounts of zeal for the acquisition of books which different professors exhibit.

The Librarian also calls attention to the Library's practice of lending books to persons connected with other institutions, — a practice which is developing, and which involves sending the books by express to considerable distances, as for instance to Texas, Kansas, and California. It is a fundamental principle in the University Library that the main reason for collecting and keeping books is to get them used, particularly by scholars, authors, and teachers.

The report of the Curator of the Herbarium shows that large and valuable additions were made in 1894–95 to the collections in his charge. A fascicle of the Synoptical Flora of North America, prepared by the Curator, was sent to press in June last, and has been published since the beginning of the current year. A second fascicle is in preparation. A new edition of Dr. Gray's *Field, Forest, and Garden Botany*, revised and extended by Professor L. H. Bailey of Cornell University, was issued during the year.

The Curator calls attention to the pressing financial needs of the Herbarium. The interest on the permanent fund, even when supplemented by the annual income from the valuable copyrights given to the Herbarium by Professor Gray, is wholly insufficient for the proper support of the establishment. The generous gifts for immediate use, made by members of the Visiting Committee, will have been expended in about two years more. The present staff of the Herbarium consists of the Curator, two accomplished assistants engaged chiefly in determinative work, a collector, a librarian, and three aids

employed in mounting and distributing specimens. To reduce this staff would mean either to diminish the rate of growth of the collection, or to prevent activity in contributing to the progress of Systematic Botany. It is impossible to contemplate with satisfaction either of these alternatives.

The Director of the Botanic Garden reports an increasing attendance at the Garden of school children accompanied by their teachers. He desires the substitution of iron conservatories for the wooden structures now in use; but the resources of the Garden do not permit the building of iron houses. They must come by gift. Since a large and well-selected variety of exotics is needed to illustrate morphology systematic and economic botany, and in part geographical botany, iron houses of proper size would cost at least \$30,000.

The number of students of Botany, both in term time and at the Summer School, increases, so that the apparatus of all the laboratories is much worn. A good deal of this equipment must soon be renewed or replaced.

The general Museum of Botany advances somewhat rapidly towards completion. The cases throughout the exhibition rooms have been finished, and are now receiving their specimens. The Ware Memorial collection, prepared by the Blaschkas, contains at this date 573 species, and continues to attract a large number of greatly interested visitors. It is intended to make this unique collection exhibit the structural relation of plants to each other. While the Botanical Department has undertaken to make selected series of specimens attractive to the general public, it has not forgotten to provide, also, all necessary material and appliances for investigation, in rooms well fitted for such purposes. The funds of the Department yield an income sufficient for the current expenses of the Garden proper; but the application of all this income to the Garden, leaves the Museum wholly dependent on gifts for present use. These gifts have been large and frequent. Provision for the development of the Ware collection has already been made; but the Department needs permanent funds for the development of the rest of the Botanical Museum.

The Arnold Arboretum was enlarged and improved during the year 1894-95 by a new contract made between the President and Fellows of Harvard College and the City of Boston, which was similar in scope and purpose to the contract of 1882 under which the interests of the public and the University have since been coöperatively developed. The total area of the Arboretum is now $222\frac{6}{10}$ acres, and the length of the roads when finished will be $2\frac{1}{8}$ miles. The new contract provides for a change in the line of Bussey Street, and leases to the President and Fellows for Arboretum purposes, about 22 acres of land, the control of which was retained by the City in 1882. About 11 of these acres had belonged to the President and Fellows. On the other hand, the City gets the permanent use for park purposes of about 72 acres of land, in addition to the original area of the Arboretum, without paying anything therefor. No difficulties have arisen as yet in carrying out the original contract between the City and the University, and none can be anticipated. It has proved to be an equitable arrangement in the interest of both parties. Every year adds to the beauty and instructiveness of the living collections.

The crowded condition of the laboratories in Boylston Hall forced the Corporation to construct a new laboratory in the basement during the summer of 1895. At the same time much needed improvements in the ventilation of the whole building were made, and new hoods and steam baths were provided for the Quantitative Laboratory. By the use of fans driven by electric motors effective out-going draughts have been secured from both hoods and rooms. These enlargements and improvements have cost about \$9,000, a heavy charge which must be met from the unrestricted income of the year now current. The new laboratory contains desks for 116 men, each desk being provided with two lockers, so that 232 students working at two different sets of hours can use the room.

The Director of the Laboratory, Professor Hill, was obliged to give a large portion of his time, during the long vacation as well as in term time, to the administrative work of the laboratory, and to planning and directing the improvements made in the building.

Instructor Bancroft having, like so many of the assistants and instructors in the Chemical Laboratory in recent years, obtained promotion at another university, his subject of instruction—Chemical Physics—was assigned at the end of the year to Assistant Professor Richards.

Thirteen investigations were published during the year, of which six were conducted mainly by Professor Jackson, and seven mainly by Assistant Professor Richards.

Through the wide adoption in schools of methods of teaching Physics which have originated in the Jefferson Physical Laboratory within recent years, a considerable proportion of the candidates for admission to Harvard College and the Scientific School have had an opportunity of studying Laboratory Physics in the preparatory schools. Nearly seventy per cent. of these candidates now enter College with a knowledge of Experimental Physics (p. 207); and Physics is the subject in Natural Science which is most thoroughly taught in the secondary schools, and with the most substantial results.

The Tyndall Scholarship continues to answer the purpose of its founder in training men competent to make physical investigations. Incidentally, it trains, also, professors and other teachers of Physics (p. 209).

The number of elementary courses in Physics offered by the Department might properly be somewhat increased, in order to meet the various wants of young men who come from the preparatory schools at different stages of preparation in the subject. Indeed, the careful arrangements of the language departments in this respect might well be copied by the scientific departments.

The Director of the Observatory points out in his report (p. 211) that the Observatory is an institution primarily for research and only secondarily for teaching; and that from the first establishment of the Observatory much attention has been given to astronomical physics. Although teaching is not its first object, a considerable number of astronomers and teachers of science have been educated wholly or in part at the Observatory. In the list of men who have been connected with

the Observatory, there are eighteen who were astronomers or physicists before their connection with the Observatory, of whom seven remained in its service through life or are still in it, and ten pursued science or taught it after leaving the Observatory. In addition, thirty-two persons came as students, or with the intention of making astronomy a profession, and of these persons, eight remained till their death or are still here, while seventeen pursued science or taught it after leaving the Observatory. Furthermore twelve persons who came as assistants remained through life or are still here, and three others, who joined the staff as assistants, pursued science or taught it after leaving the Observatory. Courses in astronomy have lately been given in Radcliffe College, and the three first women to take these courses now hold important positions in other colleges.

The Director did during the year a large amount of work with the meridian photometer, work which led to the satisfactory conclusion that it is extremely improbable that the catalogues made with the meridian photometer are sensibly affected by errors of identification. It was also shown that the accuracy of individual settings was not materially increased by making them more deliberately. To secure the greatest accuracy, it is better to increase the number of evenings on which each star is observed than to devote too much time to each setting. This has been from the beginning the policy of the Director.

The Observatory announces its willingness to lend its photographs to astronomers who desire to discuss photographs which they have not the opportunity of taking themselves. Investigations might thus be made of positions, of the distribution and brightness of stars in clusters, of the distribution of light in spectra, of peculiar spectra, and of other similar phenomena. The collection of photographs now affords a means of determining with certainty the variability of stars in any part of the sky.

The value of the Boyden Station at Arequipa in Peru has been made plainer and plainer. The atmospheric conditions are unrivaled, and the field of work is unlimited, little attention having been paid heretofore to the southern stars,

as no large refracting telescope has ever been used south of latitude 35° North. The great need of the Station is a telescope of large size to be used by an observer who can devote his time exclusively to visual observations. The Bruce telescope has started for Peru. It is evident that the Arequipa Station should be permanently maintained.

The Curator of the Museum of Comparative Zoölogy gives in his report (p. 223) an interesting account of the principal marine biological laboratories in Europe, in the hope that his views may help to shape the course of the University when the time comes for it to establish a marine station, either independently, or by coöperation with other universities. The opinion of the Curator inclines to a laboratory carried on jointly by several universities, in connection with the station of the United States Fish Commission at Wood's Hole, provided that an equitable agreement, satisfactory to the Fish Commission, could be effected.

Lack of space prevents the placing of any collections either in the Geological or Geographical exhibition rooms. Indeed, the rooms which were to have been assigned to this department are now occupied by other departments. It is hoped that the geological and geographical collections will eventually be arranged in the southwest corner-section of the University Museum, the construction of which is not yet begun. Placed there, these exhibition rooms would join the mineralogical collection on the north, and the ethnological collection of the Peabody Museum on the east.

The amount of the Museum publications during the year 1894-95, was exceptionally large, owing to the appearance of several reports of the "Albatross" Expedition of 1891, and of the Curator's expeditions to the Bermudas, the Bahamas, and Cuba.

The Curator calls the attention of the Corporation to the embarrassed condition of the Museum. With the inevitable reduction in the average rate of interest earned on the investments of the Corporation, the income of the Museum steadily declines. The time must come when the gratuitous services of a competent Curator can no longer be obtained, and when the

assistants required to preserve and develop the collections, will have to be paid for their whole time such salaries as are paid at other institutions. From the founding of the Museum, it has received a great deal of gratuitous service in all departments; but it cannot be hoped that this state of things will continue indefinitely. At present, the Curator maintains the scientific activity of the establishment largely at his own cost. This condition of things indicates that a considerable endowment will have to be secured sooner or later, in order to maintain efficiency.

The number of visitors to the exhibition rooms continues to increase, and is especially large on Sunday afternoons. The Curator points out that the usefulness of the collections to the public would be much increased if the Museum were able to employ competent guides, who would, at specified times, explain the more interesting features of the several exhibition rooms to the visitors then present. Some school teachers who have familiarized themselves beforehand with the most instructive contents of the exhibition rooms, are in the habit of bringing their pupils in groups to see the Museum; and these guided groups are, of all visitors to the Museum, the most satisfactory.

Important additions were made to the Peabody Museum of American Archaeology and Ethnology during the year 1894-95, among which may specially be mentioned the Hemenway, Rindge, and Englemann collections. Archaeological researches were conducted at Copan, Honduras, under the direction of the Museum, with the coöperation of the American Museum of Natural History of New York. Within the past four years \$32,241 have been expended in researches relating to the ancient civilization of Central America, this money having been contributed by friends of the Museum interested in such researches.

The collections have increased so much that more room for them is urgently needed. The resources of the Museum, however, are too limited to permit the Trustees to entertain the hope of enlarging their building, except through gifts for that purpose. The University instruction in Archaeology

and Ethnology has been extended to include two courses, both primarily intended for graduates.

It will be observed in the report of the Curator, Professor Putnam, that the income of the Museum from funds in the hands of the Treasurer is less than \$5500 a year. From this very moderate sum all the salaries and other annual expenses of the Museum must be defrayed. Yet to put in order and keep in order the collections already in hand would require the constant work of several Museum assistants in addition to the labor of the Curator. The Museum therefore stands in need not only of a great enlargement of its building, but of a permanent endowment with which to maintain an adequate staff.

The Semitic Museum made some desirable acquisitions during the year, and continues to attract the general public, as well as to add to the value of some of the Semitic courses of instruction.

The Curator of the Fogg Art Museum presents a report for the first time. The important decision concerning the conduct of the Museum is the decision to make it chiefly a collection of casts, electrotypes, and photographs. Since the building does not permit the proper display of any large number of casts, a selection has been carefully made of the best typical examples. A classified collection of electrotypes of coins is on exhibition. The collection of photographs is already large, amounting to nearly 15,000; and these photographs are accessible to all members of the University and to other suitable persons day and evening. They are classified in groups by epochs, and each group is subdivided into countries, and under each country into the departments of Architecture, Sculpture, and Painting. It is intended to make thorough trial of photographs as means for the comparative study of the Fine Arts. The exhibition of artistic objects for cursory inspection by the public is the secondary object of the Museum, the primary object being to provide means for thorough study, and well-illustrated instruction.

The lecture hall is provided with an electrical stereopticon of the best construction, and the formation of a large collection

of slides has begun. It is intended by these means to supply ample means of illustration for large classes. The Museum is an important addition to the resources of the University.

A report from the Dean of Radcliffe College finds place in this Report for the first time. The year 1894-95 was the first under the alliance between the University and Radcliffe College which was consummated in May and June, 1894. For the first time, women graduates in Arts were admitted to courses primarily for graduates in Harvard University; but the inroad was by no means alarming, only eight such courses being elected by twelve graduate students registered in Radcliffe. As the nature of the alliance between the College and the University becomes known to the public, the number of women graduates, registered in Radcliffe and attending Harvard University graduate courses, will surely increase. Indeed, the number of such students in attendance during the current year exhibits a decided increase. It is only through Radcliffe College that women graduates are admitted to the University courses. As a public illustration of the intimate relation established between Radcliffe College and the University, the Commencement exercises of Radcliffe College were held on the 25th of June last in Sanders Theatre.

The Summer Courses of the University were decidedly successful in the summer of 1895, as regards both the number of students and their quality. The total number in all courses rose from 493 in the summer of 1894 to 575 in 1895. The courses in English and in Physical Training were especially successful. More courses were offered in Cambridge than ever before; and the Dental School for the first time offered a summer course. The courses which experience proves to be demanded are courses in English, German, French, American History, Education and Teaching, Solid Geometry, Trigonometry, Physics, Chemistry, Botany, Physical Geography, Geology, and Physical Training, in addition to the summer courses of the Medical School and the Dental School. Other subjects, like field work in Engineering, for example, might doubtless be made successful; but those enumerated have actually succeeded. Many

University teachers are glad to take part in the work during the first half of the vacation, and many teachers in schools and other colleges resort to the courses, having become convinced that the whole of the long vacation is not necessary for recreation, and also that by exclusive devotion to one subject for six weeks substantial acquisitions may be made, particularly by persons of mature minds and trained powers of application. The University is of course glad to have its resources utilized during almost half of the long vacation.

The Boston Symphony Orchestra, by direction of Mr. Henry L. Higginson, has given a series of concerts in Sanders Theatre every season since 1881-82. The annual number of concerts was six for two years, five in 1883-84, six again for two years, then four in 1886-87, then five for three years, then eight for two years, and ten in and after 1892-93. The price of tickets has been low and uniform throughout the theatre, and several hundred of the most agreeable seats have always been sold to members of the University and their families before any public sale has taken place. The University contributes only the use of the theatre—a delightful room for music. To hear these concerts under such favorable conditions is a privilege which many members of the University and other residents of Cambridge value very highly.

Another musical interest successfully developed at the University within recent years is the choir of boys and students at all the services in Appleton Chapel. The repertory is rich and varied, the choir well-chosen and well-trained, the parts well-balanced, and the number of solo singers adequate. Many students and other persons find great pleasure and profit in the Chapel music.

From the foundation of the College down to the year 1849 the College itself was responsible for the feeding of almost all its students. It maintained in one form or another “commons” at which board could be obtained at fixed prices. In that year, owing chiefly to the constant disturbances which originated in commons, that method was abandoned, and for sixteen years, down to the autumn of 1865, the College in no

way concerned itself with the boarding arrangements of the students. During these years no satisfactory mode of boarding students at low prices was developed by private enterprise in Cambridge, and the hardships of the poorer students became so great, and their health suffered so much, that means were obtained by private subscription to provide rooms and an equipment for a large boarding-club, which became known as the Thayer Club, because Mr. Nathaniel Thayer of Boston was the principal promoter of the undertaking. This club promptly succeeded, although its quarters were of the humblest; and in 1874 it supplied the nucleus of the Dining Hall Association which occupied Memorial Hall. Within fifteen years of the opening of Memorial Hall, in consequence of the great increase in the number of students in Cambridge, Memorial Hall itself became inadequate; and, moreover, the weekly price maintained by the Association was higher than the poorer students in Cambridge wished to pay. Thereupon the Foxcroft Club, economically conducted on the *à la carte* system, was set on foot with some assistance from the Corporation, and has now been successfully carried on for five years with a constantly increasing membership.

In Memorial Hall and the Foxcroft Club together about 1500 students are at present accommodated. The other 1400 students in Cambridge find board in private houses or restaurants. It appears to be impossible, or at any rate very difficult, for private persons to maintain boarding places for students, which are both cheap and of a satisfactory quality. There have been two good opportunities within thirty years for such private enterprises, — namely, the period when commons were discontinued (1849–1865), and the period during which Memorial Hall has been overflowing (1885–1895). Well-to-do students, who can afford to pay from \$5 to \$8 a week for board, can obtain what they desire in Cambridge houses and restaurants; but the poorer students have never been able to obtain what they need in that way at prices within their reach. The state of prices for provisions does not account for the absence of good but cheap boarding tables in Cambridge during the past twenty years. With insignificant exceptions all the prices have been falling; and particularly such large

items as beef, potatoes, flour, sugar, butter, eggs, milk, gas and coal, have been much reduced in price.* The experience of the Foxcroft Club demonstrates that with free rent and some clerical assistance from the University, young men can be satisfactorily boarded in Cambridge at from \$2.50 to \$2.80 a week.

It is much the same with rooms. Within recent years it has been demonstrated that private persons can profitably build good dormitories for students, and carry them on in a cleanly, orderly, and even elegant manner at a profit, provided that rents can be kept at figures which on the average approach \$300 for single rooms, and \$500 for double rooms. Even higher rents than these are paid in at least two private dormitories in Cambridge,—namely, \$400 for single rooms and \$600 for double rooms. The College therefore need not concern itself about lodging-rooms for students who can afford to pay large rents. On the other hand no satisfactory provision

* The following comparison of prices paid by the Dining Hall Association in Memorial Hall in 1874-75 and in 1894-95 illustrates this fall in the price of provisions:

	Nov. 1874.	Nov. 1894.
Beef (rump and loin)	\$.14	.12½
Mutton (loin and legs) . . . . .	.08	.09
Lamb . . . . .	.09	.08
Turkeys . . . . .	.20	.14
Chickens . . . . .	..	.14
Halibut . . . . .	.13½	.16
Cod. . . . .	.05½	.06
Haddock . . . . .	.05½	.06
Oysters	1.45	1.00
Potatoes . . . . .	.75	.64
Flour	7.75	3.75
Sugar . . . . .	.11	.04 ⁴⁴ / ₁₀₀
Butter . . . . .	.41	.27
Eggs . . . . .	.33	.24
Coffee . . . . .	.37	.31
Tea (Formosa) . . . . .	.75	.50
Milk (can of 8½ qts.) . . . . .	.45	.37
Gas	3.00	1.30
Coal	7.00	4.60
Waiter's wages (a month)	18.00	20.00

has ever been made in Cambridge for students who desire cheap rooms, except that which the College has made. There has been every opportunity for private persons to make such provision, for the number of low-priced College rooms has been wholly inadequate for at least thirty years. The policy of the College in regard to dormitories has been to build them as fast as gifts applicable to that purpose are received, and to contribute the land needed. In regard to another dining-hall it would gladly carry out the same policy, if the object should commend itself to some intending benefactor. To provide an enlarged Foxcroft Club with a plain but substantial and well-equipped hall and kitchen would require about \$70,000.

A tabular report by Dr. George W. Fitz, Medical Visitor, on cases of illness among the students in Cambridge for the year 1894-95, is printed in the Appendix (p. 274). It appears from this report that the months in which the most cases of sickness occur are February and March, March being worse than February. January and April come next in respect to the number of cases. At least two-thirds of the students taken ill remain in Cambridge. The number of contagious cases in Cambridge is very small in proportion to the number of non-contagious cases. In the different months from October to May, inclusive, there were from five to twenty-three students simultaneously ill in Cambridge. This number affords some indication of the use which might be made of an infirmary for students, if the University possessed one, although some cases of illness can be satisfactorily dealt with in the students' rooms. The number of contagious cases treated at the College hospital on Jarvis St. was, six of scarlet fever, four of mumps, and two of measles. The present provision for the care of cases of mumps and measles is inadequate; for these cases cannot be sent to the Cambridge City Hospital. In the year under review there were mild epidemics of mumps and measles in the month of April, and most of the cases had to be cared for in the students' rooms. It is not entirely satisfactory to send cases of scarlet fever and diphtheria to the Cambridge City Hospital; for students have to be treated in the same wards with cases sent in

by the Cambridge Board of Health. It is obvious that there is need of an infirmary for students; but the Corporation have no means of providing one.

The Medical Visitor made 660 visits to students in their rooms, and made about 300 calls when he found students out. He also had about 600 consultations at his office and the Scientific School. These visits and consultations are all gratuitous. The students talk with the Medical Visitor about their physical condition, their sleep, exercise, and diet; and it is believed that much good is done in these interviews.

During the year 1894-95 the President and Fellows pursued a frugal policy and kept their expenditures in the University, College, and Library account well within their income. At the end of the year the balance of receipts over expenses on this account was \$22,239.55; but this balance was appropriated beforehand to the cost of the alterations in Gore Hall, towards which \$2,150.27 had also been paid before August 1st.

Three departments of the University had deficits for the year, — namely, the Medical School, the Lawrence Scientific School, and the Veterinary School. There was a deficit also in the Bussey Institution; but this was due to a readjustment of old income and expense accounts between the Bussey Real Estate and the Bussey Institution, and not to an excess of expenditure over income. Every other department closed the year with a surplus of receipts over expenses. The whole deficit in the Medical School, and one-third of the deficit in the Lawrence Scientific School, could be charged against previous reserves.

The net income on the general investments — $4\frac{52}{100}$ per cent. — shows a loss of $\frac{32}{100}$ of 1 per cent. when compared with that for 1893-94; but the loss of income from investments on the account called College, University, and Library, was much more than made up by the increase in College term-bills. As a considerable increase in the number of students has again taken place at the opening of the year 1895-96, the Corporation have reason to expect that they can keep their expenditure within their income for the current year in all departments except the Scientific School and the Veterinary School.

In the list of College funds in the Treasurer's Statement will be found this year fourteen small funds belonging to the seventeenth and eighteenth centuries, newly taken out from the account called Exhibitions in which for many years they had been merged. The amounts of these funds are insignificant; but among the names of the givers occur the names of two Presidents of the College, one Treasurer, and four members of the Corporation, and of Tutor Flynt who served for fifty-five years.

The hard times of 1893-1895 have arrested, or slackened, the flow of benefactions to the University:—

Gifts and bequests in 1891-92,	. . . . .	\$516,532.20
“ “ “ “ 1892-93,	. . . . .	551,136.10
“ “ “ “ 1893-94,	. . . . .	182,890.32
“ “ “ “ 1894-95,	. . . . .	171,060.62

The attention of the Overseers is respectfully invited to the following reports of the several departments and scientific establishments. It is not possible for the President to present even the briefest summary of the departmental reports within the limits proper to his Report to the Overseers. To get a just conception of the work of the University in any year, it is necessary to examine the departmental reports themselves.

CHARLES W. ELIOT, *President*.

CAMBRIDGE, 2 January, 1896.

REPORTS OF DEPARTMENTS.

THE FACULTY OF ARTS AND SCIENCES.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR,—I have the honor of presenting to you the report of the Dean of the Faculty of Arts and Sciences for the academic year 1894-95:—

In entering upon this office, I am impressed anew by the qualities of wise judgment, moderation, tact, and serenity of temper, which are universally recognized as characterizing my predecessor, and which make a position that he has filled doubly difficult to one coming after him. In my discharge of my new duties, I shall constantly rely on my remembrance of Professor Dunbar's methods of administration, and of the spirit in which he carried them out.

Appointed only at the beginning of the current academic year, in September 1895, I deem it best for me not to attempt any elaborate discussion of the action of the Faculty during the last year. I shall limit myself to the bare presentation of the leading points of the business of the Faculty in that year, treating them simply as matters of fact.

The following is a list of the courses of instruction which were given during the year under the direction of the Faculty of Arts and Sciences, omitting all mention of those which were previously announced, but were for any reason not given. The number and classification of the students in attendance on each course are also stated.

A few of these courses were among those announced by the Faculty of Divinity, and were therefore given partly under the direction of that Faculty, as well as under that of the Faculty of Arts and Sciences. The courses thus belonging to the two Faculties were: most of those in Semitic Languages and History; Philosophy 5, 6, 7, 13, and 14; and History 7 and 20*a*. The other courses in the following list were given exclusively under the direction of the Faculty of Arts and Sciences.

COURSES OF INSTRUCTION, 1894-95.*

SEMITIC LANGUAGES AND HISTORY.

For Graduates and Undergraduates :—

1. Dr. CHESTER. — Hebrew. — Davidson's Introductory Hebrew Grammar. — Explanation of parts of Genesis and of the Psalm-book. 3 hours.
3 Se., 2 Ju., 1 Di. Total 6.
6. Professor LYON. — Babylonian-Assyrian History. — Diffusion of the Babylonian-Assyrian culture through the Phoenicians. 1 hour.
4 Gr., 8 Se., 11 Ju., 12 So. Total 35.
12. Professor LYON. — History of Israel, political and social, from the establishment of royalty till the death of Herod the Great. 2 hours.
2 Gr., 12 Se., 13 Ju., 9 So., 2 Fr., 3 Sp., 7 Di. Total 48.
16. Professor G. F. MOORE. — History of pre-Christian Hebrew literature. 2 hours.
1 Se., 1 Ju., 11 Di. Total 13.
13. Professor G. F. MOORE. — History of the Hebrew religion, with comparison of other Semitic religions. 2 hours.
1 Gr., 7 Di. Total 8.

Primarily for Graduates :—

2. Professor LYON. — Hebrew (second course). — Syntax. — Interpretation of parts of the Prophets and the Poetical Books. — Criticism of selected portions of the text. 2 hours.
1 Se., 3 Di. Total 4.
3. Professor LYON. — Classical Aramaic (Syriac). — Rödiger's Chrestomathia Lyriaca, ed. 3. — The Peshitto version of the New Testament. 2 hours.
1 Gr., 2 Di. Total 3.
5. Professor LYON. — Assyrian (second course). — Delitzsch's Assyrian Grammar. — The Chaldean Epic. — Letters and Commercial Documents. 2 hours.
1 Gr., 1 Di. Total 2.
7. Dr. CHESTER. — Arabic. — Lansing's Grammar. — Nuḥab-al-Mulāḥ. — The Thousand and One Nights. 2 hours.
1 Gr., 1 Se. Total 2.
8. Dr. CHESTER. — Arabic (second course). — Wright's Grammar. — The Moallakāt. — Montenebbi. — Ibn Ḥaldun. — The Korān. 2 hours.
2 Gr. Total 2.
10. Dr. CHESTER. — Phoenician. — Schröder's Phönizische Sprache. — Corpus Inscriptionum Semiticarum. 1 hour.
1 Gr. Total 1.

COURSES OF RESEARCH.

- 20a. Professor LYON. — Assyrian Grammar. 1 Gr. Total 1.
- 20d. Professor Moore. — The Book of Judges. 3 Gr., 1 Di. Total 4.
- Semitic Seminary. 3 Gr., 1 Di. Total 4.

* The classes of students in the several courses are designated as follows: Gr. for Graduate Student, Se. for Senior, Ju. for Junior, So. for Sophomore, Fr. for Freshman, Sp. for Special Student, Sc. for Scientific Student, Di. for Divinity Student, Law for Law Student, Me. for Medical Student, R. for Radcliffe Student.

INDO-IRANIAN LANGUAGES.

For Graduates and Undergraduates :—

- 1¹. Mr. MORE.—Elements of the Sanskrit language.—Sounds and inflexions.—Reading of easy prose and verse. 3 hours.
2 Gr., 4 Se., 2 So. Total 8.
- 1². Mr. MORE.—Sanskrit (continued).—Reading of the classical texts in Lanman's Reader.—Translation at sight. 3 hours. 2d half-year.
1 Gr., 2 Se., 2 So. Total 5.
- 2¹. Professor LANMAN.—Sanskrit (second year).—Course for rapid reading.—Select episodes from the Laws of Manu and the Ramayana. 3 hours. 1st half-year. 1 Ju. Total 1.

Primarily for Graduates :—

- 3². Professor LANMAN.—Sanskrit.—Introduction to the language and literature of the Vedas (the Atharva Veda and the Rig Veda). 3 hours. 2d half-year. 1 Gr., 1 Ju. Total 2.

COURSE OF RESEARCH.

20. Professor LANMAN.—Special advanced study of selected Sanskrit works, with practice in the use of the manuscripts of the Harvard collection.
1 Gr. Total 1.

The Sanskrit Conference was held twice a month during the second half-year, with an average attendance of about twelve students (chiefly seniors and graduates).

CLASSICAL PHILOLOGY.

Primarily for Undergraduates :—

GREEK.

INTRODUCTORY LECTURES provided for the students in Courses *B*, *C*, and *D*.

- (1) Dr. BATES.—Homer.
(2) Asst. Professor MORGAN.—Lysias and his Times.
(3) Professor GOODWIN.—Socrates and Plato.
(4) Professor WHITE.—The Greek Theatre and Dramatic Performances.

- A*. Dr. HAYLEY.—Herodotus (selections).—Homer (selections from Books I–XII of the Iliad).—Reading at sight. 3 hours.

2 Se., 3 So., 10 Fr., 8 Sp., 1 Sc. Total 24.

- F*. Mr. PARKER.—Greek Prose Composition (elementary course). 3 hours a fortnight. 5 So., 6 Fr., 2 Sp. Total 13.

- B*. Asst. Professor MORGAN and Dr. BATES.—Homer (selections from the Odyssey).—Lysias (selections).—Plato (Apology and Crito).—Euripides (Medea).—Reading at sight. 3 hours.

1 Se., 2 Ju., 1 So., 26 Fr., 2 Sp. Total 32.

- C*. Asst. Professor MORGAN and Dr. BATES.—Homer (selections from the Odyssey).—Lysias (selections).—Plato (Apology and Euthyphro).—Euripides (Iphigenia among the Taurians).—Reading at sight. 3 hours.

2 Ju., 3 So., 18 Fr. Total 23.

D. Asst. Professor MORGAN. — Homer (selections from the *Odyssey*). — *Lysias* (selections). — Plato (*Apology*, *Crito*, and *Euthyphro*). — Euripides (*Medea*). — Reading at sight. 3 hours. 2 Gr., 2 So., 47 Fr. Total 51.

E. Dr. BATES. — Greek Prose Composition (second course). — Goodwin's *Moods and Tenses*. 3 hours a fortnight.

3 Gr., 1 Se., 3 Ju., 5 So., 19 Fr. Total 31.

1. Mr. PARKER. — Demosthenes (*Phillippics*). — Plato (*Protagoras*). — Euripides (*Iphigenia among the Taurians*). — Aristophanes (*Knights*). — Plutarch (selections). — Reading at sight. 3 hours.

4 Ju., 9 So., 1 Sp. Total 14.

2. Professor WHITE. — Aristophanes (*Birds*). — Aeschylus (*Prometheus Bound*). — Thucydides (*Book I*). — Sophocles (*Oedipus Tyrannus*). — Collateral reading of the *Plutus* of Aristophanes. — Reading at sight. 3 hours.

1 Se., 3 Ju., 24 So., 2 Fr. Total 30.

3. Dr. BATES. — Greek Prose Composition (third course). — Translation and original composition. 1 hour.

4 Se., 2 Ju., 12 So. Total 18.

LATIN.

INTRODUCTORY LECTURES provided for the students in Courses *B*, *C*, and *D*.

(1) Dr. HAYLEY. — Plautus and Terence.

(2) Asst. Professor MORGAN. — The Roman Theatre.

(3) Asst. Professor HOWARD. — The Metrical and Musical Element in Roman Comedy.

A. Mr. MANNING. — Cicero (selected orations). — Virgil. — Practice in reading at sight. 3 hours.

1 Ju., 3 So., 10 Fr., 17 Sp., 3 Se. Total 34.

F. Dr. HAYLEY. — Latin Composition (elementary course). — Collar's *Practical Latin Composition*. 3 hours a fortnight.

1 Se., 3 So., 3 Fr., 2 Sp. Total 9.

B. Asst. Professor HOWARD and Mr. MANNING. — Cicero (*De Amicitia*). — Livy (*Books XXI and XXII*). — Terence (*Adelphoe* and *Andria*). — Reading at sight. 3 hours.

1 Ju., 3 So., 43 Fr., 4 Sp. Total 51.

C. Asst. Professor HOWARD, Dr. HAYLEY, and Mr. MANNING. — Cicero (*De Amicitia*). — Livy (*Books I and II*). — Terence (*Phormio* and *Andria*). — Reading at sight. 3 hours.

2 Ju., 3 So., 68 Fr., 4 Sp. Total 77.

D. Asst. Professor HOWARD and Dr. HAYLEY. — Cicero (*De Amicitia*). — Livy (*Books I. and II.*). — Terence (*Phormio*). — Plautus (*Captives*). — Reading at sight. 3 hours.

1 Gr., 1 Ju., 3 So., 44 Fr. Total 49.

E. Mr. MANNING. — Latin Composition (second course). — Translation of English narrative. 3 hours a fortnight.

1 Gr., 2 Ju., 2 So., 20 Fr. Total 25.

1. Professor SMITH. — Tacitus (selections from the *Annals*). — Horace (*Odes* and *Epodes*). — Reading at sight. 3 hours.

2 Se., 3 Ju., 23 So. Total 28.

2. Mr. PARKER. — Tacitus (selections from the *Histories*). — Horace (*Odes* and *Epodes*). — Reading at sight. 3 hours.

4 Se., 8 Ju., 35 So., 2 Fr., 1 Sp. Total 50.

3. Mr. PARKER. — Latin Composition (third course). — Extended study of Idiom. — Practice in translation. 1 hour.
2 Gr., 3 Se., 1 Ju., 12 So. Total 18.

Primarily for Undergraduates and Graduates : —

GREEK.

- 6¹. Professor GOODWIN. — Demosthenes (On the Crown, with parts of the oration On the Embassy). — Aeschines (Against Ctesiphon). 3 hours. 1st half-year.
1 Gr., 4 Se., 16 Ju., 1 So. Total 22.
- 6². Professor ALLEN. — Aeschylus (Seven against Thebes). — Sophocles (Antigone). — Aristophanes (Frogs). 3 hours. 2d half-year.
4 Gr., 6 Se., 14 Ju. Total 24.
7. Asst. Professor MORGAN. — Greek Prose Composition (fourth course). — Written composition in the style of Demosthenes and of Plato, with studies of classical models. — Translation of selections of standard English (rhetorical and philosophical). 1 hour.
5 Gr., 5 Se., 1 Ju. Total 11.
8. Professor GOODWIN. — Plato (Republic). — Aristotle (Ethics, Books I-IV and X). 3 hours.
9 Gr., 13 Se., 3 Ju. Total 25.
10. Professor WHITE. — The Life of the Ancient Athenians, described and illustrated by the aid of the Literature and of the Monuments. 2 hours.
13 Gr., 21 Se., 22 Ju., 3 So. Total 59.
4. Professor WHITE. — The Comedies of Aristophanes. — Reading of the Plays and Scenic Antiquities (first half-year). Special studies in Aristophanes (second half-year). 2 hours.
18 Gr., 7 Se., 1 Ju. Total 26.

LATIN.

6. Asst. Professor HOWARD. — Horace (selected Satires and Epistles). — Pliny (selected Letters). — Juvenal (the principal Satires). 3 hours.
4 Se., 15 Ju., 5 So. Total 24.
- 13². Professor SMITH. — Catullus and the Elegiac Poets. 2 hours. 2d half-year.
11 Gr., 9 Se., 5 Ju., 2 So. Total 27.
7. Professor GREENOUGH. — Practice in Latin expression and style. — Study of selections from classical prose as models. — Translation into Latin prose. — Original essays in Latin. 1 hour. 4 Gr., 7 Se., 2 Ju. Total 13.
- 8¹. Professor SMITH. — Plautus. 3 hours. 1st half-year.
5 Gr., 14 Se., 6 Ju., 1 So. Total 26.
- 8². Professor GREENOUGH. — Lucretius. — Cicero (selected Letters). 3 hours. 2d half-year.
6 Gr., 12 Se., 4 Ju., 1 So. Total 23.
12. Professor SMITH. — History of Latin Literature (Prose). — Lectures, with direction of the students' private reading. 2 hours.
18 Gr., 9 Se., 1 So. Total 28.

Primarily for Graduates : —

- Seminary. — Professors GOODWIN and ALLEN, directors for 1894-95. Training in philological criticism and research. — Aeschylus (Eumenides) and Ennius. 3 hours.
12 Gr. Total 12.

25. Asst. Professor MORGAN. — Introductory Course in the Text-Criticism and Interpretation of Classical Authors: for 1894-95, Andocides. 3 hours a fortnight. 4 Gr. Total 4.
34. Professor ALLEN. — Lectures on Greek Grammar, with study of Dialectic Inscriptions. 2 hours. 11 Gr. Total 11.
- 28². Professor GREENOUGH. — Latin Grammar (Syntax). 2 hours. 2d half-year. 6 Gr., 3 Se. Total 9.
- 27². Professor GOODWIN. — The Politics of Aristotle. 2 hours. 2d half-year. 6 Gr. Total 6.
- 38². Professor GOODWIN. — Advice and help in a course of private reading in some department of Greek Literature. 2d half-year. 4 Gr. Total 4.
- 30¹. Professor ALLEN. — The Roman Comedy. — Lectures. — Study of the Menaechmi of Plautus. 3 hours. 1st half-year. 11 Gr., 1 Se. Total 12.
- 36¹. Professor GREENOUGH. — Cicero's Exposition of Greek Philosophy. 3 hours. 1st half-year. 3 Gr., 4 Se., 1 Di. Total 8.
- 39². Mr. PARKER. — Stoicism in the First and Second Centuries. 3 hours. 2d half-year. 2 Gr., 1 Se., 1 R. Total 4.
35. Professor WHITE. — Disputed Questions in Athenian Topography. 1 hour. 7 Gr. Total 7.
26. Professor GREENOUGH. — The Private Life of the Romans (second course). — Study of special topics. 2 hours. 3 Gr. Total 3

ENGLISH.

Primarily for Undergraduates:—

- A. Professors A. S. HILL and BRIGGS, and Messrs. HURLBUT, COPELAND, LAMONT, BOYNTON, HART, and DAMON. — Rhetoric and English Composition. — A. S. Hill's Rhetoric, and part of his Foundations of Rhetoric. — Lectures, written exercises and conferences. 3 hours. 6 So., 344 Fr., 62 Sp., 110 Sc. Total 522.
- B. Messrs. LAMONT, GARDINER, YOUNG, and ABBOTT. — Twelve Themes. — Lectures, and discussions of themes. 2 hours. 1 Gr., 1 Se., 11 Ju., 50 So., 27 Fr., 17 Sp., 18 Sc., 1 Law. Total 126.
- C. Messrs. BAKER, LAMONT, and HALL. — Forensics. — Lectures on Argumentative Composition. — A brief based on a master-piece of argumentative composition. — Four forensics, preceded by briefs. — Discussions of briefs and of forensics. 2 hours. 2 Gr., 65 Se., 312 Ju., 40 So., 8 Sp., 5 Sc., 1 Law. Total 433.
- BC. Messrs. BAKER, HURLBUT, and HALL. — English composition. — Written exercises and conferences. 2 hours. 1 So., 45 Sc. Total 46.
28. Professors CHILD, A. S. HILL, BRIGGS, and KITTREDGE. — English. — History and Development of English Literature in outline. 2 hours. 1 Ju., 3 So., 34 Fr., 9 Sp. Total 47.
- 3¹. Dr. F. N. ROBINSON. — Anglo-Saxon. — Bright's Anglo-Saxon Reader. 3 hours. 1st half-year. 14 Gr., 6 Se., 7 So., 2 Sp. Total 29.

22. Messrs. GATES, FARLEY, MOODY, and ABBOTT. — English Composition. 3 hours. 1 Gr., 1 Se., 4 Ju., 201 So., 10 Fr., 26 Sp., 8 Sc. Total 248.
6. Asst. Professors HART and CUMMINGS, and Mr. HAYES. — Oral Discussion of Topics in History and Economics. 2 hours. 29 Gr., 1 Law. Total 30.
10. Mr. HAYES. — Elocution. 2 hours. 1 Gr., 20 Se., 35 Ju., 4 So., 8 Sp., 1 Sc., 2 Law. Total 71.

For Graduates and Undergraduates : —

1. Professor KITTREDGE and Dr. F. N. ROBINSON. — English Literature. — Chaucer. 3 hours. 16 Gr., 13 Se., 1 Ju. Total 30.
2. Professors CHILD and KITTREDGE. — English Literature. — Shakspere (six plays). 3 hours. 15 Gr., 26 Se., 19 Ju., 16 So., 3 Sp., 1 Sc. Total 80.
- 11¹. Dr. F. N. ROBINSON. — English Literature. — Bacon. 3 hours. 1st half-year. 1 Gr., 2 Se., 5 Ju., 2 So. Total 10.
- 11². Dr. F. N. ROBINSON. — English Literature. — Milton. 3 hours. 2d half-year. 7 Gr., 21 Se., 14 Ju., 11 So., 2 Fr., 5 Sp., 1 Sc. Total 61.
7. Mr. GATES. — English Literature of the Eighteenth Century. 1 hour. 18 Gr., 33 Se., 34 Ju., 26 So., 10 Sp., 3 Sc., 1 Law. Total 125.
- 8¹. Professor A. S. HILL. — English Literature. — Poets of the Nineteenth Century. 2 hours. 1st half-year. 5 Gr., 46 Se., 24 Ju., 24 So., 8 Sp. Total 107.
13. Mr. LAMONT. — Literary Criticism in England since the Sixteenth Century. 1 hour. 4 Gr., 1 Se., 1 So., 1 Di. Total 7.
12. Messrs. GARDINER and YOUNG. — English Composition. 2 hours. 10 Gr., 49 Se., 42 Ju., 7 So., 7 Sp., 1 Sc., 1 L., 1 Di. Total 118.
18. Mr. BAKER. — Argumentative Composition. — Eight Forensics preceded by briefs. — Lectures and conferences. 1 hour. 1 Se., 1 L., 1 R. Total 3.

Primarily for Graduates : —

16. Mr. GATES. — History and Principles of English Versification. 1 hour. 3 Gr., 3 Se., 1 Ju., 1 So., 1 Sp. Total 9.
- 3². Professor KITTREDGE. — Anglo-Saxon Poetry. — Bëowulf. 3 hours. 2d half-year. 13 Gr., 4 Se., 3 So. Total 20.
4. Professor CHILD and Dr. F. N. ROBINSON. — Early English. — Old English Literature from 1200 to 1450. — Mätzner's Altenglische Sprachproben. 3 hours. 12 Gr. Total 12.
- 21². Professor KITTREDGE. — Early English. — The Metrical Romances. — Lectures and theses. 3 hours. 2d half-year. 8 Gr. Total 8.
27. Professor CHILD. — The English and Scottish Popular Ballads. 3 hours. 1st half-year. 12 Gr., 1 Se. Total 13.
5. Professor A. S. HILL. — English Composition (advanced course). 3 hours. 8 Gr., 7 Se., 2 Ju., 1 So., 1 Law. Total 19.

COURSE OF RESEARCH.

20. Professor KITTREDGE. — Special Study. 2 Gr. Total 2.

GERMAN.

Primarily for Undergraduates:—

- A. Mr. NICHOLS, Dr. BIERWIRTH, and Mr. CALKINS.—Elementary Course.—Grammar.—Translation from German into English, and elementary exercises in translating into German. 3 hours.
3 Gr., 1 Se., 12 So., 148 Fr., 15 Sp., 59 Sc., 1 Law. Total 239.
- B. Dr. POLL.—Elementary Course.—Grammar.—Composition.—Translation and reading at sight.—Selections in Prose and Poetry. 5 hours.
1 Gr., 2 Se., 3 So., 22 Fr., 4 Sp., 2 Sc. Total 34.
- C. Associate Professor BARTLETT and Dr. BIERWIRTH.—Intermediate Course.—Grammar.—Composition.—Translation and reading at sight.—Selections from the Writers of the Eighteenth and Nineteenth Centuries. 3 hours.
3 Ju., 9 So., 64 Fr., 7 Sp., 2 Sc. Total 85.
- 1a. Asst. Professor SCHILLING and Mr. CALKINS.—German Prose and Poetry.—Lessing (Minna von Barnhelm).—Schiller (Wilhelm Tell).—Goethe (Egmont).—Lyrics and Ballads.—Modern Historical and Narrative Prose.—Composition.—Reading at sight. 3 hours.
1 Gr., 5 Se., 7 Ju., 63 So., 12 Fr., 5 Sp., 6 Sc. Total 99.
- 1b. Mr. NICHOLS.—German Prose.—Subjects in History and Biography.—Reading at sight. 3 hours.
3 Se., 2 Ju., 19 So., 8 Fr., 4 Sp., 4 Sc. Total 40.
- 1c. Mr. COAR.—German Prose.—Subjects in Natural Science.—Reading at sight. 3 hours. 1 Gr., 2 Se., 8 Ju., 7 So., 9 Fr., 2 Sp., 28 Sc. Total 57.
- E. Mr. NICHOLS.—German Grammar and practice in writing German (first course). 1 hour. 1 Se., 3 Ju., 19 So., 6 Fr., 1 Sp. Total 30.
- F. Dr. POLL.—German Grammar and practice in writing German (second course). 1 hour. 2 Se., 5 Ju., 20 So., 4 Fr., 2 Sp. Total 33.
- G. Asst. Professor SCHILLING.—German Grammar and practice in writing German (third course). 1 hour. 3 Se., 2 Ju., 2 So. Total 7.
2. Dr. POLL.—Lessing and the German Drama.—Practice in writing German. 3 hours. 1 Se., 9 Ju., 16 So., 12 Fr., 5 Sp. Total 43.
3. Asst. Professor SCHILLING.—Schiller and his Contemporaries.—Practice in writing German. 3 hours.
2 Se., 19 Ju., 29 So., 13 Fr., 2 Sp. Total 65.
4. Asst. Professor VON JAGEMANN.—Goethe and his time.—Practice in writing German. 3 hours.
3 Gr., 6 Se., 19 Ju., 35 So., 11 Fr., 2 Sp., 1 Sc., 1 Law. Total 78.

For Graduates and Undergraduates:—

5. Asst. Professor SCHILLING.—General History of German Literature; with special reference to the Classic Periods of the Twelfth and Eighteenth Centuries.—Lectures, with collateral reading. 3 hours.
6 Gr., 13 Se., 18 Ju., 7 So., 1 Sp., 1 Me. Total 46.

8. Asst. Professor VON JAGEMANN. — German Literature in the Twelfth and Thirteenth Centuries. — Nibelungenlied. — Kudrun. — Hartmann's Iwein. — Wolfram's Parzival. — Walther von der Vogelweide. — Translation into Modern German. — Lectures and theses. 3 hours.

6 Gr., 1 Se., 1 Ju. Total 8.

- 10¹. Dr. POLL. — German Literature from the Reformation to the Classic Period. — Lectures, reading, and theses. 3 hours. 1st half-year.

2 Gr., 4 Se., 1 Ju., 3 So., 1 Sp., 1 Di. Total 12.

GERMANIC PHILOLOGY.

Primarily for Graduates. :—

- 12¹. Asst. Professor VON JAGEMANN. — Gothic. Introduction to the study of Germanic Philology. 3 hours. 1st half-year.

11 Gr., 3 Se., 1 R. Total 15.

- 14². Asst. Professor VON JAGEMANN. — Old Saxon. Introduction to the study of Germanic Philology (continued). 3 hours. 2d half-year.

11 Gr., 2 Se., 1 R. Total 14.

- 20a. Asst. Professor VON JAGEMANN. — The Seminary. 1 Gr. Total 1.

FRENCH.

Primarily for Undergraduates :—

- A. Mr. BABBITT. — Elementary Course. — French Prose and Composition. 3 hours.

7 Gr., 7 Se., 6 Ju., 6 So., 34 Fr., 25 Sp., 29 Sc., 1 Law, 1 Di. Total 116.

- 1b. Asst. Professor SANDERSON and Mr. LA MESLÉE. — Reading at sight of Historical French Prose. — Translation from French into English. 3 hours.

6 Se., 12 Ju., 27 So., 38 Fr., 11 Sp., 16 Sc., 1 Law. Total 111.

- 1c. Dr. MARCOU and Mr. BABBITT. — Reading, grammar, and composition. 3 hours.

4 Ju., 9 So., 34 Fr., 7 Sp., 6 Sc. Total 60.

- 1a. Asst. Professor DE SUMICHRAST, Dr. MURE, Dr. MARCOU, and Mr. BABBITT. — Reading, grammar, and composition. 3 hours.

1 Gr., 1 Se., 7 Ju., 25 So., 67 Fr., 12 Sp., 6 Sc. Total 119.

2. Asst. Professor SANDERSON and Mr. LA MESLÉE. — French Prose and Poetry. — La Fontaine. — Corneille. — Racine. — Molière. — Beaumarchais. Alfred de Musset. — Balzac. — Composition. 3 hours.

6 Se., 21 Ju., 88 So., 78 Fr., 7 Sp., 7 Sc. Total 207.

3. Messrs. BRUN and LA MESLÉE. — Practice in speaking and writing French (elementary course). 2 hours.

5 Se., 30 Ju., 47 So., 20 Fr., 10 Sp., 4 Sc. Total 116.

4. Mr. BRUN. — Practice in speaking and writing French (intermediate course). 2 hours.

1 Gr., 10 Se., 23 Ju., 20 So., 8 Fr., 1 Sp. Total 63.

5. Mr. BRUN. — Practice in speaking and writing French (advanced course). — Oral discussions. 2 hours.

6 Se., 7 Ju., 16 So., 2 Fr., 3 Sp., 1 Sc., 1 Law. Total 36.

14. Professor BÔCHER. — Difficult Modern French. — Reading and Translation. 2 hours.

3 Gr., 36 Se., 42 Ju., 43 So., 11 Fr., 4 Sp. Total 139.

For Graduates and Undergraduates:—

6. Asst. Professor DE SUMICHRAST. — General view of French Literature, from its origins to the present day. — Lectures, readings and themes. 3 hours.
3 Gr., 17 Se., 29 Ju., 47 So., 7 Fr., 2 Sp. Total 105.
8. Asst. Professor DE SUMICHRAST. — French Literature in the Eighteenth Century. — Lectures, themes, and collateral reading. 3 hours.
13 Se., 18 Ju., 5 So., 1 Fr., 2 Sp., 1 Law. Total 40.
10. Professor BÔCHER. — French Literature in the Sixteenth Century. — Lectures, themes, and collateral reading. 3 hours.
2 Gr., 10 Se., 5 Ju., 2 So., 2 Sp. Total 21.

Primarily for Graduates:—

COURSES OF RESEARCH.

20. Asst. Professor DE SUMICHRAST. — Advanced Study. 1 Gr. Total 1.
- 20a. Professor BÔCHER. — The comedies of Molière and those of his immediate predecessors, his contemporaries, and his immediate successors. 2 hours.
1 Gr., 4 Se., 1 Ju., 1 Sp. Total 7.

ITALIAN.

Primarily for Undergraduates:—

1. Professor SHELDON. — Elements of Grammar. — Selections from modern authors. — Elementary exercises in writing Italian. 3 hours.
1 Gr., 13 Se., 15 Ju., 5 So., 6 Fr., 1 Sp., 1 Law. Total 42.

For Graduates and Undergraduates:—

2. Asst. Professor MARSH. — Literature of the Fifteenth and Sixteenth Centuries. — Torquato Tasso. — Ariosto. — Machiavelli. — Pulci. — Reading at sight. — Syntax and Prose Composition, with reading of modern texts. 3 hours.
2 Se., 3 Ju., 6 So. Total 11.

Primarily for Graduates:—

3. Professor SHELDON. — Literature of the Thirteenth and Fourteenth Centuries. — Selections from Boccaccio, Petrarca, Dante. — Early Italian. — Monaci's *Crestomazia italiana dei primi secoli*. 3 hours.
2 Gr., 1 So., 1 Sp. Total 4.
4. Professor NORTON. — Literature and the Fine Arts in Italy during the Middle Ages and the Renaissance, with special study of Dante. 2 hours.
3 Gr., 4 Se., 1 Ju., 1 Law, 2 Di. Total 11.

SPANISH.

Primarily for Undergraduates:—

- 1a. Asst. Professor MARSH. — Grammar, reading, and composition. — Modern novels and plays. — *El Eco de Madrid*. 3 hours.
1 Gr., 2 Se., 4 Ju., 13 So., 11 Fr., 3 Sp., 1 Sc. Total 35.
- 1b. Dr. MARCOU. — Elements of Grammar. — Reading of simple modern Spanish. — Elementary exercises in writing Spanish. — Simple conversation. 3 hours.
1 Gr., 7 Se., 11 Ju., 11 So., 5 Fr., 1 Di. Total 36.

For Graduates and Undergraduates :—

2. Dr. MARCOU.—Literature of the Sixteenth and Seventeenth Centuries.—Cervantes, Lope de Vega, Calderon.—Composition. 3 hours.
2 Gr., 4 Se., 7 Ju., 7 So., 1 Fr., 1 Sp., 1 Sc. Total 23.

ROMANCE PHILOLOGY.

Primarily for Graduates :—

3. Professor SHELDON.—Old French.—Phonology and Inflexions.—The oldest texts.—La Chanson de Roland.—Joinville.—Chrétien de Troies.—Aucassin et Nicolette. 2 hours. 9 Gr., 1 Se., 1 Sp. Total 11.
4. Dr. MARCOU.—Provençal.—Language and Literature, with selections from the poetry of the Troubadours. 2 hours. 2 Gr., 1 Se. Total 3.
6. Professor SHELDON.—Old French Dialects, with special reference to Anglo-Norman. 2 hours. 1 Gr. Total 1.

COURSES OF RESEARCH.

20. Professor SHELDON.—Investigation of special subjects. 2 Gr. Total 2.

COMPARATIVE LITERATURE.

For Graduates and Undergraduates :—

1. Asst. Professor MARSH.—The History of Latin Literature in the Middle Ages (beginning with the Fourth Century), and its relations to Classic and Modern Literature.—Lectures and theses. 2 hours. 2 Gr., 1 Se. Total 3.
2. Asst. Professor MARSH.—Mediaeval Literature in the vulgar tongues, with especial reference to the influence of France and Provence.—Lectures and theses. 3 hours. 5 Gr., 1 Se. Total 6.

PHILOSOPHY.

Primarily for Undergraduates :—

1. Professors PALMER and JAMES and Dr. SANTAYANA.—General Introduction to Philosophy.—Logic.—Psychology.—Metaphysics and History of Philosophy. 3 hours.
1 Gr., 30 Se., 127 Ju., 80 So., 6 Fr., 24 Sp., 15 Sc., 2 Law. Total 285.

For Graduates and Undergraduates :—

SYSTEMATIC COURSES.

2. Professor MÜNSTERBERG.—Psychology.—Lectures, experiments, and theses. 3 hours. 12 Gr., 23 Se., 13 Ju., 4 So., 1 Fr., 2 Sp., 4 Sc. Total 59.
3. Professor JAMES.—Cosmology.—A study of the fundamental conceptions of Natural Science, with special reference to theories of Evolution and Materialism.—Lectures and theses. 3 hours.
5 Gr., 11 Se., 11 Ju., 2 So., 2 Sp., 1 Sc., 1 Di. Total 33.
4. Professor PALMER.—Ethics.—The Theory of Morals, considered constructively.—Lectures, theses, and private reading. 3 hours.
8 Gr., 19 Se., 14 Ju., 1 So., 4 Sp., 1 L., 3 Di. Total 50.

5. Professor PEABODY. — The Ethics of the Social Questions. — The questions of Charity, the Family, Temperance, and the various phases of the Labor Question, as problems of practical Ethics. — Lectures, essays, and practical observations. 2 hours. 1 Gr., 40 Se., 15 Ju., 3 So., 5 Sp., 20 Di. Total 84.
6. Professor EVERETT. — The Psychological Basis of Religious Faith. — Lectures. 1 hour. 3 Gr., 3 Se., 1 Ju., 1 Sp., 26 Di. Total 34.
7. Professor EVERETT. — The Content of Christian Faith. — Lectures and a thesis. 3 hours. 18 Di. Total 18.
8. Dr. SANTAYANA. — Aesthetics. — The Psychology of Taste and the History of Aesthetic Theories. — Lectures, theses, and private reading. 3 hours. 2 Gr., 8 Se., 2 Ju., 1 So. Total 13.
9. Professor ROYCE. — Metaphysics. — The fundamental problems of Theoretical Philosophy, considered constructively. — The Problem of Knowledge. — Realism and Idealism. — The Problems of Causation, Freedom, Teleology, and Theism. Theses. 3 hours. 10 Gr., 5 Se., 4 Ju., 4 Sp., 2 Di. Total 25.

HISTORICAL COURSES.

- 11¹. Dr. SANTAYANA. — English Philosophy from Hobbes to Hume. — Lectures, recitations, and private reading. 3 hours. 1st half-year. 4 Gr., 10 Se., 2 Ju., 1 Sp. Total 17
12. Professor ROYCE. — Kant and Schopenhauer. — Lectures. — Translation of selections from the above authors. 3 hours. 3 Gr., 3 Se., 1 Di. Total 7.
13. Professor EVERETT. — Comparative Religion. — Studies in the Comparative History of Religions, particularly the Vedic Religion, the Hindu Philosophies, Buddhism, Mazdaism, and the Chinese Religions. 2 hours. 4 Gr., 4 Se., 2 Ju., 1 Sp., 25 Di. Total 36.
14. Professor PEABODY. — The Philosophy of Religion; its rise, problem, and results. — Lectures, required reading, and a thesis. 1 hour. 1 Gr., 2 Se., 2 So., 13 Di. Total 18.

Primarily for Graduates : —

COURSES OF RESEARCH.

- 20a. Professor MÜNSTERBERG. — Psychological Laboratory. — Laboratory exercises and special investigations for advanced students. 11 Gr., 1 Se., 1 So., 2 Sp., 4 R. Total 19.
- 20b. Professor JAMES. — Psychological Seminary. — Questions in Mental Pathology, embracing a review of the principal forms of abnormal or exceptional mental life. 2 hours. 4 Gr., 1 Se., 1 Sp., 1 Me. Total 7.
- 20c. Professor ROYCE. — Metaphysical Seminary. — Subject for the year: The Development of the Hegelian System. — Lectures, papers, and original research. 2 hours. 6 Gr., 1 R. Total 7.
- 20d. Professor PALMER. — Ethical Seminary. — The Comparison of Ethical Ideals. 2 hours. 3 Gr., 2 Di., 1 R. Total 6.
- 20e. Dr. SANTAYANA. — Studies in Scholastic Philosophy. 2 hours. 2 Di. Total 2.

COURSES IN EDUCATION AND TEACHING.

For Graduates and Undergraduates :—

16. Asst. Professor HANUS. — The History of Educational Theories and Practices. — Lectures, discussions, and reports. — Two essays. 2 hours.
5 Se., 2 Ju., 1 Sp., 1 Sc. Total 9.
18. Asst. Professor HANUS. — Introduction to Educational Theory. — Lectures, reports, and discussions. — One essay. 1 hour.
4 Gr., 1 Se., 6 Sc. Total 11.

Primarily for Graduates :—

17. Asst. Professor HANUS. — Organization and Management of Public Schools and Academies. — Supervision, Courses of Study, and Instruction. — Lectures, discussions, and reports, 2 hours. 5 Gr., 8 Se., 1 Ju. Total 14.
- 20f. Asst. Professor HANUS. — Pedagogical Seminary. — Aims, Organization, Equipment, and Methods of Secondary Education. — Lectures, essays, reports and discussions. 1 hour. 10 Gr. Total 10.

HISTORY.

Primarily for Undergraduates :—

1. Dr. COOLIDGE. — Mediaeval and Modern European History (introductory course). 3 hours. 3 Ju., 56 So., 257 Fr., 41 Sp., 7 Sc. Total 364.

For Graduates and Undergraduates :—

7. Professor EMERTON. — The Era of the Reformation in Europe from the rise of Italian Humanism to the close of the Council of Trent (1350–1563). 2 hours. 9 Gr., 18 Se., 13 Ju., 10 So., 1 Sp., 18 Di. Total 69.
8. Asst. Professor GROSS. — History of France to the reign of Francis I. 2 hours. 6 Gr., 6 Se., 11 Ju., 2 So., 2 Sp. Total 27.
9. Asst. Professor GROSS. — Constitutional History of England to the Sixteenth Century. 3 hours. 9 Gr., 18 Se., 15 Ju., 9 So., 3 Sp. Total 54.
11. Asst. Professor CHANNING. — European History during the Seventeenth Century and the first half of the Eighteenth. — Constitutional History of England during the Stuart Period. 3 hours. 2 Gr., 19 Se., 19 Ju., 16 So., 3 Sp., 1 Sc. Total 60.
- 12¹. Professor MACVANE. — Constitutional History of England since the reign of George II. 3 hours. 2d half-year. 5 Gr., 24 Se., 28 Ju., 45 So., 5 Fr., 5 Sp. Total 112.
- 12². Professor MACVANE. — History of Continental Europe since the Middle of the Eighteenth Century. 3 hours. 1st half-year. 7 Gr., 44 Se., 59 Ju., 89 So., 15 Fr., 17 Sp., 1 Sc., 1 Law, 1 Me. Total 234.
10. Asst. Professor CHANNING. — American History (to 1783). 3 hours. 4 Gr., 16 Se., 36 Ju., 84 So., 3 Fr., 12 Sp., 1 Sc. Total 156.
13. Asst. Professor HART. — Constitutional and Political History of the United States (1783–1865). 3 hours. 6 Gr., 69 Se., 65 Ju., 35 So., 1 Fr., 17 Sp., 1 Sc., 2 Law. Total 196.
- 15¹. Dr. COOLIDGE. History of Northern and Eastern Europe. 3 hours. 1st half-year. 1 Gr., 15 Se., 7 Ju., 6 So., 1 Fr., 1 Sp., 1 Sc. Total 32.

Primarily for Graduates:—

22. Asst. Professor GROSS.—The Sources and Literature of English Constitutional History. 1 hour. 3 Gr. Total 3.

SEMINARY COURSES.

- 20a. Professor EMERTON.—Church and State. 5 Gr., 2 Di. Total 7.
 20b. Asst. Professor GROSS.—English Institutions in the Middle Ages. 1 Gr. Total 1.
 20c. Professor MACVANE.—Recent Constitutional History. 2 Se., 1 Ju., 1 R. Total 4.
 20e. Asst. Professors CHANNING and HART.—American History and Institutions. 10 Gr. Total 10.

GOVERNMENT AND LAW.

Primarily for Undergraduates:—

- 1¹. Professor MACVANE.—Constitutional Government (elementary course). 3 hours. 1st half-year.
 1 Se., 26 Ju., 123 So., 119 Fr., 49 Sp., 2 Se., 1 Law. Total 321.

For Graduates and Undergraduates:—

4. Mr. CONANT.—Elements of International Law and the History of American Diplomacy. 3 hours. 15 Se., 11 Ju., 4 So., 3 Sp. Total 33.
 5. Mr. WILLIAMS.—History and Institutes of Roman Law.—Institutes of Justinian, except the Law of Inheritance.—Selections from the Institutes of Gaius. 3 hours. 19 Se., 7 Ju., 2 So., 2 Law. Total 30.
 6¹. Federal Government, historical and comparative. 2 hours. 1st half-year. 4 Gr., 7 Se., 1 Ju. Total 12.
 7². Professor MACVANE.—Leading principles of Constitutional Law: selected cases, American and English. 3 hours. 2d half-year.
 8 Gr., 8 Se., 16 Ju., 18 So., 12 Fr., 14 Sp., 1 Se., 1 Law. Total 78.
 17. Mr. CONANT.—The Principles of the Common Law.—Rights and their Enforcement.—Elements of Jurisprudence. 3 hours.
 6 Gr., 49 Se., 14 Ju., 3 So., 10 Sp., 1 Se., 3 Law. Total 86.

Primarily for Graduates:—

- 10¹. Professor MACVANE.—Principles of Government: Selections from leading writers, together with studies in existing political systems. 2 hours. 1st half-year. 9 Gr., 4 Se., 2 Ju. Total 15.
 11. Asst. Professor CHANNING.—History of Political Theories, with especial reference to the origin of American Institutions.—Studies from Machiavelli, Calvin, Hobbes, the Puritan state papers, Winthrop, Locke, Rousseau, Otis, Jefferson, Madison, and others. 2 hours. 9 Gr. Total 9.
 12. Asst. Professor HART.—Government and Political Methods in the United States, national, State, and municipal. 2 hours.
 5 Gr., 14 Se., 1 Ju. Total 20.
 16¹. Mr. WILLIAMS.—Roman Law.—The Law of Obligations.—Selections from the Corpus Juris.—Development since the time of Justinian. 2 hours. 1st half-year. 3 Se., 1 Law. Total 4.

ECONOMICS.

Primarily for Undergraduates:—

1. Professor ASHLEY, Asst. Professor CUMMINGS, Dr. CUMMINGS, and Mr. CLOW.—Outlines of Economics.—Mill's Principles of Political Economy.—Lectures on Economic Development, Distribution, Social Questions, and Financial Legislation. 3 hours.
2 Gr., 39 Se., 18 Ju., 159 So., 9 Fr., 44 Sp., 5 Sc., 1 Law. Total 277.
10. Professor ASHLEY.—The Elements of Economic History from the Middle Ages to Modern Times. 2 hours.
9 Gr., 20 Se., 21 Ju., 10 So., 1 Sp. Total 61.

For Graduates and Undergraduates:—

2. Professors ASHLEY and MACVANE.—Economic Theory from Adam Smith to the present time.—Selections from Adam Smith and Ricardo.—Modern Writers.—Lectures. 3 hours.
9 Gr., 14 Se., 6 Ju., 1 So., 3 Sp., 1 Law. Total 34.
8. Asst. Professor CUMMINGS.—The Principles of Sociology.—Development of the Modern State, and of its Social Functions. 2 hours.
10 Gr., 30 Se., 4 Ju., 3 So., 5 Sp. Total 52.
14. Asst. Professor CUMMINGS.—Philosophy and Political Economy.—Utopian Literature from Plato's Republic to the present time. 2 hours.
5 Se., 2 Ju., 1 So. Total 8.
9. Asst. Professor CUMMINGS.—The Social and Economic Condition of Workmen in the United States and in other countries. 3 hours.
3 Gr., 34 Se., 31 Ju., 5 So., 6 Sp. Total 79.
- 5². Mr. VIRTUE.—Railway Transportation.—Lectures and written work. 3 hours. 2d half-year. 2 Gr., 10 Se., 6 Ju., 1 So., 1 Sc., 1 Law. Total 21.
- 8¹. Professor DUNBAR.—History of Financial Legislation in the United States. 2 hours. 1st half-year. 5 Gr., 22 Se., 22 Ju., 2 Sp., 1 Law. Total 52.
- 7¹. Professor DUNBAR.—The Theory and Methods of Taxation, with special reference to local taxation in the United States. 3 hours. 1st half-year.
6 Gr., 11 Se., 9 Ju., 2 So. Total 28.
- 7². Professor DUNBAR.—Financial Administration and Public Debts. 3 hours. 2d half-year.
7 Gr., 11 Se., 9 Ju., 1 So. Total 28.

Primarily for Graduates:—

20. Professors DUNBAR and ASHLEY, and Asst. Professor CUMMINGS.—Seminary in Economics. 15 Gr., 2 Se. Total 17.

THE FINE ARTS.

Primarily for Undergraduates:—

1. Asst. Professor MOORE.—Principles of Delineation, Color, and Chiaroscuro.—Lectures (once a week), with collateral reading.—Practice in drawing and in the use of water-colors.—Perspective. 3 hours.
7 Se., 7 Ju., 11 So., 11 Fr., 1 Sp., 28 Sc. Total 65.

2. Asst. Professor MOORE. — Principles of Design in Painting, Sculpture, and Architecture. — Lectures (twice a week), with collateral reading. — Practice in drawing and water-colors. 3 hours.

4 Se., 2 Ju., 5 So., 1 Sp., 4 Sc. Total 16.

For Graduates and Undergraduates : —

4. Professor NORTON. — Roman and Mediaeval Art, with special study of the Development of Gothic Architecture, and of the Revival of Art in Italy in the Thirteenth Century. 3 hours.

7 Gr., 140 Se., 152 Ju., 105 So., 4 Fr., 25 Sp., 10 Sc., 2 Law, 1 Di. Total 446.

ARCHITECTURE.

- 1a. Asst. Professor WARREN. — Technical and Historical Development of the ancient styles, with a special reference to Classic Architecture. Lectures and practice in the drawing room. 3 hours. 1 Se., 1 Sp., 25 Sc. Total 27.

- 1b. Asst. Professor WARREN. — Technical and Historical Development of the Mediaeval styles of Architecture. Lectures and practice in the drawing room. 3 hours. 1 Sp., 4 Sc. Total 5.

- 2a. Mr. NEWTON. — Elementary architectural drawing. 3 hours.

1 Sp., 25 Sc. Total 26.

- 3a. Asst. Professor WARREN and Mr. NEWTON. — Freehand drawing from architectural subjects. 6 hours. 6 Sc. Total 6.

- 4a. Asst. Professor WARREN and Mr. NEWTON. — Elementary architectural design. Lectures and practice. 7 hours. 1 Sp., 3 Sc. Total 4.

MUSIC.

For Graduates and Undergraduates : —

1. Professor PAINE. — Harmony. 2 to 5 hours.

1 Se., 1 Ju., 5 So., 6 Fr., 3 Sp. Total 16.

2. Professor PAINE. — Counterpoint. 2 hours.

2 Ju., 11 So., 1 Fr., 1 Sp. Total 15.

7. Professor PAINE. — Instrumentation. 1 hour. 1 Gr., 1 Se., 3 Ju. Total 5.

Primarily for Graduates : —

5. Professor PAINE. — Canon and Fugue. 2 hours.

1 Se., 3 Ju., 1 Sp. Total 5.

MATHEMATICS.

Primarily for Undergraduates : —

- A¹. Mr. COAR. — Logarithms. — Plane and Spherical Trigonometry. 3 hours. 1st half-year. 6 Se., 5 Ju., 11 So., 30 Fr., 7 Sp., 6 Sc. Total 65.

- B². Mr. COAR. — Plane Analytic Geometry (elementary course). 3 hours. 2d half-year. 1 Se., 1 Ju., 7 So., 19 Fr., 5 Sp., 5 Sc. Total 38.

- C. Asst. Professor BÔCHER. — Plane and Solid Analytic Geometry (extended course). 3 hours. 1 Gr., 1 Se., 1 Ju., 6 So., 15 Fr., 1 Sp., 3 Sc. Total 28.

- D¹. Asst. Professor OSGOOD and Mr. LOVE. — Algebra. 3 hours.

2 Se., 7 Ju., 5 So., 22 Fr., 6 Sp., 1 Sc. Total 43.

- E*². Mr. LOVE. — Solid Geometry. 3 hours.
6 Se., 2 Ju., 2 So., 28 Fr., 8 Sp., 5 Sc. Total 51.
- F*. Mr. ASHTON. — Trigonometry and Plane Analytic Geometry. 3 hours.
2 Se., 2 Ju., 8 So., 36 Fr., 3 Sp., 2 Sc. Total 53.
2. Asst. Professor OSGOOD. — Differential and Integral Calculus (first course).
3 hours. 3 Gr., 8 Ju., 15 So., 2 Fr., 1 Sp., 8 Sc. Total 37.
4. Asst. Professor OSGOOD. — The Elements of Mechanics. 3 hours.
3 Gr., 3 Se., 3 Ju., 1 Sc. Total 10.

For Graduates and Undergraduates: —

3. Professor BYERLY. — Modern Methods in Geometry. — Determinants. 3 hours.
10 Gr., 4 Se., 1 Ju., 4 So., 1 Sc. Total 20.
5. Professor BYERLY. — Differential and Integral Calculus (second course).
3 hours. 10 Gr., 13 Se., 12 Ju., 2 So., 1 Sc. Total 38.
12. Asst. Professor BÔCHER. — The Theory of Equations. — Algebraic Analysis. — Invariants and Covariants. 3 hours. 10 Gr., 8 Se., 3 Ju. Total 21.

Primarily for Graduates: —

- 7a. Professor J. M. PEIRCE. — The General Theory of Curves and Surfaces (first course): Algebraic Plane Curves, especially Curves of the Third Degree in point or line coördinates. 3 hours. 5 Gr., 3 Ju. Total 8.
9. Professor J. M. PEIRCE. — Quaternions, with applications to Geometry and Mechanics (second course). 3 hours. 2 Gr., 1 Se. Total 3.
13. Asst. Professor BÔCHER. — The Theory of Functions (introductory course).
3 hours. 7 Gr., 3 Se. Total 10.
10. Professors BYERLY and B. O. PEIRCE. — Trigonometric Series. — Introduction to Spherical Harmonics. — Potential Function. 3 hours.
6 Gr., 7 Se., 1 Ju., 1 Sc., 1 R. Total 16.
16. Professor BYERLY. — Problems in the Mechanics of Rigid Bodies. 2 hours.
2 Gr., 1 Se. Total 3.
17. Asst. Professor OSGOOD. — The Theory of Functions (second course). — Introduction to Weierstrass's Theory of Functions. 2 hours. 4 Gr. Total 4.
19. Asst. Professor BÔCHER. — Curvilinear Coördinates and Lamé's Functions.
3 hours. 2 Gr. Total 2.
21. Professor J. M. PEIRCE. — The Algebra of Logic. 3 hours a fortnight.
1 Gr. Total 1.

COURSE OF RESEARCH.

- 20b. Asst. Professor BÔCHER. — The Theory of Functions satisfying Laplace's Equation. 1 Gr. Total 1.

ENGINEERING.

- 1a. Messrs. LOVE and ASHTON. — Engineering Mathematics. — Plane Trigonometry. — Advanced Algebra. — Plane Analytical Geometry. 4 hours.
2 Ju., 1 So., 1 Sp., 71 Sc. Total 75.
- 4b. Mr. LOVE. — Engineering Mathematics. — Analytic Geometry. — Differential and Integral Calculus. 5 hours. 2 Ju., 36 Sc. Total 38.

- 2a. Dr. WILLSON. — Descriptive Astronomy. 3 hours. 1st half-year.
2 Se., 10 Ju., 3 So., 11 Sc. Total 26.
- 2b. Dr. WILLSON. — Practical Astronomy. — Use of instruments and applications to Navigation and Surveying. 3 hours. 2d half-year.
1 Se., 3 Ju., 10 Sc. Total 14.
- 2c. Dr. WILLSON. — Practical Astronomy. — Determination of time, latitude, and longitude. — Use of the sextant and astronomical transit. — Lectures, instrumental work, and computation. 3 hours. 5 Ju., 1 So., 1 Sc. Total 7.
- 3a. Messrs. A. N. JOHNSON, MOSES, and PERRY. — Mechanical Drawing. — Descriptive Geometry. — Tinting, Isometric Drawing, Shades and Shadows, Perspective. 6 hours. 1 Gr., 6 Se., 6 Ju., 2 So., 3 Fr., 58 Sc. Total 76.
- 3c. Mr. MOSES. — Structural and Machine Drawing. — Applications of Descriptive Geometry to Engineering Constructions and Machinery. 6 hours. 1st half-year.
1 Gr., 5 Se., 3 Ju., 43 Sc. Total 52.
- 3d. Mr. MOSES. — Mechanism. — Study of gearing and mechanical movements. 4 hours. 2d half-year.
1 Gr., 6 Se., 2 Ju., 37 Sc. Total 46.
- 4a. Messrs. TURNER and PERRY. — Surveying, Plotting, and Topographical Drawing. — Levelling. — Field Practice. 6 hours.
1 Se., 6 Ju., 1 So., 1 Fr., 27 Sc. Total 36.
- 4c. Mr. TURNER. — Geodesy. — Geodetic, Mining, and Hydrographic Surveying. — Field Practice. 6 hours. 1st half-year. 1 Ju., 6 Sc. Total 7.
- 4d. Mr. TURNER. — Railroad Engineering. — Survey, Location, and Construction of Railroads. — Field Practice. 6 hours. 2d half-year.
1 Ju., 8 Sc. Total 9.
- 5a. Professor HOLLIS. — Analytical and Applied Mechanics. — Stresses in framed structures and machines. — Problems in Statics and Dynamics. 6 hours. 1st half-year.
1 Gr., 1 Se., 3 Ju., 35 Sc. Total 40.
- 5c. Professor HOLLIS. — Resistance of Materials. — Lectures and laboratory work on materials used for structural purposes. 6 hours. 2d half-year.
1 Gr., 3 Se., 3 Ju., 29 Sc. Total 36.
- 6a. Mr. TURNER. — Hydraulics. — Flow of water and fluids of varying density. — Gauging of streams and pipes. — Power of water-falls. 3 hours. 1st half-year.
2 Se., 3 Ju., 21 Sc. Total 26.
- 6b. Mr. L. J. JOHNSON. — Hydraulic and Wind Motors. — Water-wheels, Turbines, Water-engines and Wind-wheels. 3 hours. 2d half-year.
12 Sc. Total 12.
- 6c. Mr. RICE. — Water Supply and Sanitary Engineering. 3 hours. 2d half-year.
2 Ju., 12 Sc. Total 14.
- 6d. Mr. TURNER. — Irrigation. — Construction of irrigation works and canals. — Hydrography. 2 hours. 2d half-year. 4 Sc. Total 4.
- 7a. Mr. L. J. JOHNSON. — Bridges and Buildings. — Graphical Statics. — Plate girders, riveted and pin-bridges. — Details of iron and steel construction. 6 hours, 1st half-year. 3 hours, 2d half-year. 5 Sc. Total 5.

- 8a. Mr. L. J. JOHNSON. — Masonry and Timber Structures. — Foundations, arches, dams, piers, pneumatic foundation work and tunnels. 6 hours. 2d half-year. 4 Sc. Total 4.
- 10a. Rindge School and Professor HOLLIS. — Shopwork in Metals. — Use of tools. — Fitting by hand. — Study of the metals in practical working. — Lectures and laboratory work. 6 hours. 1st half-year. 24 Sc. Total 24.
2d half-year. 15 Sc. Total 15.
- 10b. Rindge School and Professor HOLLIS. — Blacksmithing. — Use of tools. — Forging, welding, tool dressing and tempering. — Lectures and laboratory work. 6 hours. 1st half-year. 25 Sc. Total 25.
2d half-year. 12 Sc. Total 12.
- 10c. Rindge School and Professor HOLLIS. — Shopwork in Wood. — Use of tools. — Pattern-making and turning. — Lectures and laboratory work. 6 hours. 14 Sc. Total 14.
- 10d. Rindge School and Professor HOLLIS. — Foundry Practice. — Moulding. — Casting in iron and alloys. — Mixing metals. — Lectures and laboratory work. 6 hours. 14 Sc. Total 14.
- 10e. Rindge School and Professor HOLLIS. — Machine Shop Practice. — Use of machine tools. — Construction of parts of machinery; finishing and assembling parts. — Lectures and laboratory work. 6 hours. 1st half-year. 16 Sc. Total 16.
2d half-year. 17 Sc. Total 17.
- 11a. Mr. L. S. MARKS. — Machinery and Boilers. — Description of the different types of Engines and Boilers. — Theory and efficiency. — Pumping Machinery. — Hoisting Machinery. 3 hours. 1st half-year. 1 Gr., 2 Se., 33 Sc. Total 36.
- 11b. Mr. L. S. MARKS. — Steam-Engine and Boilers. — Details of construction. — Valve gears and valve setting. — Lectures and laboratory work. 3 hours. 2d half-year. 1 Gr., 25 Sc. Total 26.
- 12a. Mr. L. S. MARKS. — Thermodynamics of the Steam-Engine. — The theory and application to problems connected with steam. — Efficiency of engines and boilers. 3 hours. 2d half-year. 1 Gr., 1 Se., 16 Sc. Total 18.
- 13a. Mr. L. S. MARKS. — Engineering Laboratory. — Practical management of the steam-engine, pumps, boilers, and attachments. 3 hours. 3 Sc. Total 3.
- 13b. Mr. L. S. MARKS. — Engineering Laboratory. — Testing machinery, boilers, and accessories. — Standardizing instruments. 10 hours. 7 Sc. Total 7.
- 13d. Messrs. L. J. JOHNSON and TURNER. — Engineering Laboratory. — Practical measurement of the flow of water, and testing hydraulic machinery. Given only in part. 2 Ju., 12 Sc. Total 14.
- 14a. Mr. MOSES. — Machine Design. — Designing the parts of machinery. — Methods of proportioning the parts for strength and effect. Draughting, 4 hours. Lectures, 2 hours. 1 Sc. Total 1.
- 16a. Mr. ADAMS. — Industrial Applications of Electricity. Lectures, 2 hours. Laboratory, 3 hours. 1st half-year. 3 Sc. Total 3.

- 16c. Messrs. ADAMS and SHAW. — Direct-Current Dynamo-Electric Machinery. Theory, testing, and practice in management. Lecture, 1 hour. Laboratory, 3 hours, 1st half-year. 2 Gr., 6 Se., 1 Ju., 17 Sc. Total 26.
- 16d. Messrs. ADAMS and SHAW. — Direct-Current Dynamo-Electric Machinery. — Continuation of Course 16c, with practice in design and construction. Lecture, 1 hour. Laboratory, 6 hours, 2d half-year. 2 Gr., 2 Se., 1 Ju., 16 Sc. Total 21.
- 16e. Messrs. ADAMS and SHAW. — Alternators, Transformers, and Alternating-Current Motors. — Theory, testing, and practice in management. Lectures, 2 hours. Laboratory, 3 hours, 1st half-year. 1 Gr., 4 Se., 8 Sc. Total 13.
- 16f. Messrs. ADAMS and SHAW. — Alternators, Transformers, Alternating-Current Motors and Allied Apparatus. — Continuation of Course 16e with practice in design and construction. Lecture, 1 hour. Laboratory, 6 hours, 2d half-year. 1 Gr., 2 Se., 8 Sc. Total 11.
- 18a. Mr. TORREY. — Metallurgy. — Manufacture of the metals used in engineering construction. — Lectures on the practical working of iron and steel. — Lectures. 3 hours. 1st half-year. 1 Ju., 11 Sc. Total 12.
21. Professor HOLLIS. — Engineering conference on the general theory of machinery and the commercial and economic questions involved in the selection of types of machinery for given localities and duties. — Comparison of different methods of transmitting power. 1 Se., 11 Sc. Total 12.
22. Mr. CONANT. — Contracts and Specifications. — The principles of Common Law as applied to contracts. — Practice in drawing up specifications. 1 hour. 2d half-year. 9 Sc. Total 9.

PHYSICS.

Primarily for Undergraduates : —

- B. Asst. Professor HALL. — Experimental Physics. — Lecture, 1 hour. Laboratory work, 2 hours. 7 Se., 3 Ju., 26 So., 25 Fr., 18 Sp., 52 Sc. Total 131.
- C. Messrs. SABINE and McLAUGHLIN. — Experimental Physics. — Measurements in Mechanics, Sound, Heat, Light, Electricity, and Magnetism. — Lectures and laboratory work. 3 hours. 1 Gr., 8 Ju., 11 So., 26 Fr., 5 Sp., 27 Sc., 1 Law. Total 79.

1. Asst. Professor HALL. — General Descriptive Physics. — Lectures, 2 hours. Laboratory work, 2 hours. 1 Gr., 5 Se., 12 So., 16 Fr., 45 Sc. Total 79.

For Graduates and Undergraduates : —

2. Mr. SABINE. — Light and Heat. — Lectures and laboratory work in thermometry, radiation, interference, polarization, and spectrometry. 6 to 8 hours. 1 Gr., 4 Se., 1 Ju. Total 6.
3. Professor B. O. PEIRCE and Mr. DUANE. — Electrostatics, Electrokinematics, and parts of Electromagnetism. — Lecture, 1 hour. Laboratory work, 6 to 8 hours. 2 Gr., 2 Se., 3 Ju., 7 So., 1 Fr., 19 Sc. Total 34.

4. Professor TROWBRIDGE and Mr. SABINE. — Electrodynamics, Magnetism, and Electromagnetism. — Lectures, 2 hours. Laboratory work.
4 Gr., 8 Se., 4 Ju., 15 Sc. Total 31.
- 6¹. Asst. Professor HALL. — Elements of Thermodynamics. 2 hours. 1st half-year.
1 Gr., 5 Se., 2 Ju., 17 Sc. Total 25.
- 6². Asst. Professor HALL. — Thermodynamic Potential. 2 hours. 2d half-year.
2 Se., 2 Ju. Total 4.

Primarily for Graduates : —

8. Professor TROWBRIDGE. — Electrodynamics, with special reference to periodic currents of electricity. — Laboratory work, 9 hours.
2 Gr., 3 Se., 5 Sc. Total 10.
9. Professor B. O. PEIRCE. — The Mathematical Theory of Electrostatics and Electrokinematics. 3 Gr. Total 3.

COURSE OF RESEARCH.

- 20a. Professor TROWBRIDGE. — Spectrum Analysis. 1 Gr. Total 1.

CHEMISTRY.

Primarily for Undergraduates : —

- B. Mr. TORREY. — Experimental Chemistry. — Lectures, 2 hours. Laboratory work, 2½, or, if taken as a full course, 5 hours.
1 Se., 7 So., 34 Fr., 9 Sp., 7 Sc. Total 58.
1. Professor JACKSON. — General Descriptive Chemistry, including its applications in the arts, and embracing the scheme of the chemical elements. — Lectures, 2 hours. Laboratory work.
1 Gr., 21 Se., 33 Ju., 37 So., 25 Fr., 11 Sp., 63 Sc. Total 191.
2. Asst. Professor WOLFF and Mr. WHITTLE. — Mineralogy (including Crystallography, Physical and Chemical Mineralogy, and Descriptive Mineralogy). 3 hours, with additional laboratory hours.
2 Gr., 2 Se., 7 Ju., 5 So., 1 Fr., 1 Sp., 17 Sc. Total 35.
3. Professor H. B. HILL. — Qualitative Analysis. Laboratory work, about 9 hours. 2 Gr., 9 Se., 17 Ju., 12 So., 2 Sp., 17 Sc., 1 Me. Total 60.
4. Asst. Professor RICHARDS. — Quantitative Analysis, gravimetric and volumetric. Laboratory work, about 9 hours.
2 Gr., 4 Ju., 4 So., 1 Sp., 11 Sc. Total 22.

For Graduates and Undergraduates : —

- 4a. Asst. Professor RICHARDS. — Quantitative Analysis (second course). — Laboratory work, including analyses of air, gases, water, minerals, iron, and sugar. 3 hours. 1 Gr., 3 Se., 1 Ju., 3 Sc. Total 8.
5. Professor H. B. HILL. — The Carbon Compounds. — Lectures, 3 hours. Laboratory work. 3 Gr., 5 Se., 5 Ju., 5 Sc. Total 18.
8. Asst. Professor RICHARDS. — History of Chemistry and Chemical Philosophy. 2 hours. 1st half-year.
4 Gr., 3 Se., 4 Ju., 2 So., 4 Sc., 1 Law, 1 Me. Total 19.

Primarily for Graduates :—

6. Dr. BANCROFT.—Advanced Problems in Inorganic Chemistry and Chemical Physics, including Molecular Weights and Volumes, Thermo-Chemistry, and Specific Refractive Power. —Lectures, 3 hours. Laboratory work.
2 Gr., 4 Se., 1 Ju., 4 Sc. Total 11.

COURSES OF RESEARCH.

- 20a. Asst. Professor RICHARDS.—Inorganic Chemistry, including Determination of Atomic Weights. 2 Gr., 1 Se. Total 3.
- 20b. Professor JACKSON.—Aromatic Compounds. 5 hours.
4 Gr., 1 Se. Total 5.
- 20c. Professor H. B. HILL.—Organic Chemistry. 6 hours.
3 Gr. Total 3.

BOTANY.

Primarily for Undergraduates :—

- 1². Professor GOODALE.—Botany. — Lectures and laboratory practice. 3 hours. 2d half-year.
2 Gr., 13 Se., 31 Ju., 57 So., 59 Fr., 17 Sp., 27 Sc. Total 206.
- 2¹. Asst. Professor THAXTER.—Morphology of Plants. Laboratory work. 3 hours. 1st half-year. 4 Gr., 8 Se., 10 Ju., 19 So., 2 Sp., 24 Sc. Total 67.

For Graduates and Undergraduates :—

3. Professor GOODALE.—Botany (second course). Lectures and laboratory practice. 3 hours. 2 Gr., 1 Ju., 1 So., 6 Sc. Total 10.
- 4². Professor FARLOW and Asst. Professor THAXTER.—Cryptogamic Botany. Lectures and laboratory work. 3 hours. 2d half-year.
4 Gr., 1 Ju., 4 So., 4 Sc. Total 13.

Primarily for Graduates :—

COURSES OF RESEARCH.

- 20a. Professor GOODALE.—Structure and Development of Phanerogams.—Experimental Vegetable Physiology.—Systematic Botany.—Economic and Medical Botany. 6 Gr., 1 Ju., 3 Sc. Total 10.
- 20b. Professor FARLOW and Asst. Professor THAXTER.—Structure and Development of Cryptogams. 8 Gr., 1 Se., 1 Sc. Total 10.

ZOOLOGY.

Primarily for Undergraduates :—

- 1¹. Dr. C. B. DAVENPORT.—Zoölogy.—Lectures and laboratory demonstrations. 3 hours. 1st half-year.
4 Gr., 9 Se., 15 Ju., 24 So., 35 Fr., 5 Sp., 36 Sc. Total 128.
- 2². Dr. G. H. PARKER.—Morphology of Animals.—Laboratory work. 3 hours. 2d half-year.
3 Gr., 7 Se., 8 Ju., 20 So., 3 Fr., 2 Sp., 15 Sc. Total 58.

For Graduates and Undergraduates :—

3. Dr. G. H. PARKER.—Comparative Anatomy of Vertebrates.—Lectures and laboratory work. 3 hours.
2 Gr., 3 Se., 5 Ju., 1 So., 12 Sc. Total 23.
- 4¹. Professor MARK and Dr. W. McM. WOODWORTH.—Microscopic Anatomy.—Lectures and laboratory work. 3 hours. 1st half-year.
4 Gr., 3 Se., 1 Ju., 1 So., 5 Sc. Total 14.
- 5². Professor MARK.—Embryology of Vertebrates.—Lectures and laboratory work. 3 hours. 2d half-year.
3 Gr., 3 Se., 1 Ju., 1 So., 5 Sc. Total 13.
6. Dr. C. B. DAVENPORT.—Experimental Morphology.—Lectures, laboratory work, and a thesis. 2 hours. 6 Gr., 2 Se., 1 Sc. Total 9.
- 7¹. Dr. G. H. PARKER.—The Nervous System and its Terminal Organs. 3 hours. 1st half-year. 5 Gr., 2 Se., 1 Ju., 3 Sc. Total 11.

Primarily for Graduates :—

COURSES OF RESEARCH.

- 20a. Professor MARK.—Anatomy and Development of Animals.
7 Gr., 1 Sc. Total 8.
- 20c. Dr. SLADE.—Comparative Osteology. 1 Gr. Total 1.

GEOLOGY.

Primarily for Undergraduates :—

4. Professor SHALER and Messrs. DODGE and DALY.—Elementary Geology.—Lectures, laboratory and field work, with collateral reading. 4 hours.
2 Gr., 1 Se., 38 Ju., 51 So., 69 Fr., 16 Sp., 55 Sc. Total 232.
- 2¹. Professor DAVIS and Mr. GRISWOLD.—Physical Geography.—Lectures, recitations, written exercises, and laboratory work. 4 hours. 1st half-year.
1 Gr., 1 Se., 8 Ju., 5 So., 6 Fr., 15 Sc. Total 36.
- 1². Professor DAVIS and Mr. WARD.—Meteorology.—Lectures, recitations, written exercises, and laboratory work. 4 hours. 2d half-year.
1 Gr., 23 Ju., 17 So., 13 Fr., 19 Sc., 1 Sp. Total 74.

For Graduates and Undergraduates :—

- 6². Professor DAVIS.—Physical Geography of the United States.—Lectures, library work, and reports. 2 hours. 2d half-year.
3 Gr., 2 Se., 6 So., 1 Sc. Total 12.
8. Mr. J. B. WOODWORTH.—General Critical Geology.—Lectures, field work, reports, and reading. 2 hours. 3 Se., 3 Ju., 2 So., 6 Sc. Total 14.
10. Mr. H. L. SMYTH.—Mining Geology.—Lectures, reading, and occasional field work. Three times a week, from December to May.
1 Gr., 1 Ju., 8 Sc. Total 10.
11. Mr. H. L. SMYTH.—Geological Surveying.—Lectures, field work, and reports. Three times a week, from December to April.
1 Ju., 4 Sc. Total 5.

12. Asst. Professor WOLFF and Mr. WHITTLE. — Petrography. — Lectures, laboratory work, and theses. 2 hours.
2 Gr., 1 Se., 1 Ju., 1 So., 5 Sc. Total 10.
14. Professor SHALER, Dr. JACKSON, and Dr. EASTMAN. — Palaeontology. — Lectures, laboratory work, and theses. 2 hours.
2 Gr., 2 Ju., 1 So., 2 Sc. Total 7.
15. Professor SHALER, Dr. JACKSON, and Dr. EASTMAN. — Historical Geology. Laboratory and field work, with conferences and theses. 1 hour.
2 Gr., 2 Sc. Total 4.
16. Mr. J. B. WOODWORTH. — Glacial Geology. — Lectures, conferences, and field work. 1 hour.
3 Gr., 1 Sc. Total 4.
27. Mr. H. L. SMYTH. — Pre-Cambrian Geology of North America; with especial reference to the stratigraphy and economics of the rocks in the original Laurentian area and the region of the Great Lakes. Three times a week.
1 Ju., 2 Sc. Total 3.

Primarily for Graduates:—

COURSES OF RESEARCH.

20. Professor DAVIS. — Physical Geography (third course). — Conferences, reports, and theses. 1 hour.
4 Gr., 2 Sc. Total 6.
21. Professor DAVIS. — Meteorology (third course). — Lectures, library work, and theses. 1 hour.
1 Sc. Total 1.
- 22a. Mr. GRISWOLD, Professors SHALER and DAVIS, and Asst. Professor WOLFF. — Advanced geological field-work. — Field and library work, with reports, conferences, and theses. 1 hour.
1 Gr., 2 Sc. Total 3.
- 22b. Professor SHALER. — Geological investigation in the field and laboratory, under the supervision of the instructors of the Department.
3 Gr., 1 Sc. Total 4.
23. Asst. Professor WOLFF. — Petrographical research in the field and laboratory, with lectures and conferences on selected topics. 3 hours.
2 Gr. Total 2.
25. Professor WHITNEY. — Mineral Veins and Metalliferous Deposits: their mode of occurrence, and theories of their origin. Lectures, reading, and theses. 1 hour.
1 Se., 3 Sc. Total 4.

AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

For Graduates:—

1. Professor PUTNAM. — General Anthropology, with special reference to American Archaeology and Ethnology. — Lectures and laboratory work. 3 hours.
1 Gr., 2 Se., 2 So. Total 5.

ANATOMY, PHYSIOLOGY, AND PHYSICAL TRAINING.

12. Asst. Professor G. W. FIRZ. — The Elementary Physiology and Hygiene of Common Life. — Personal Hygiene. — Emergencies. Laboratory work, 2 hours. 2d half-year.
2 Se., 4 Ju., 1 So., 1 Fr., 2 Sp., 12 Sc., 1 Law. Total 23.

2. Dr. SARGENT and Asst. Professor G. W. FITZ. — History of Physical Education. — Lectures. 1 hour. 2 Sc. Total 2.
- 4¹. Dr. SARGENT. — Anthropometry. — Lecture and practical exercises. 3 hours. 1st half-year. 3 Sc. Total 3.

MILITARY SCIENCE.

Lieutenant ROBINSON. — Military Science. — Lectures on military organization, tactics, logistics, strategy, operations, military engineering, modern arms and explosives, and military law. — Required reading and reports. 2 hours. 6 Se., 7 Ju., 7 So., 4 Sc., 1 Law. Total 25.

SUMMER COURSES OF INSTRUCTION.

SUMMER OF 1894.

GERMAN.

- S2. Assoc. Professor BARTLETT. — Writers of the Nineteenth Century. — Lessing (Minna von Barnhelm). — Schiller (Wilhelm Tell). — Goethe (Hermann und Dorothea). — Riehl (Der Fluch der Schönheit). — Freytag (Aus Neuer Zeit, chapter V.). — Selections in Prose and Poetry. — Translations at sight of Modern German prose. — Grammar and composition. 5 times a week, for 6 weeks. 1 Ju., 2 Sc. Total 3.

This course corresponds to German 1a, and to the advanced German requirement for admission.

PHILOSOPHY.

- S1. Professor MÜNSTERBERG. — Psychology. — Lectures with experimental demonstrations. 6 times a week, for 6 weeks. 1 Se., 1 Ju., 1 So., 1 Sc. Total 4.
- S2. Professor MÜNSTERBERG. — Psychology. — Laboratory instruction in the methods of experimental psychology: 6 times a week, for 6 weeks. 1 Se., 1 Ju., 1 So., 1 Sc. Total 4.

Course S 2 is open to those only who at the same time take Course S 1.

If taken together these two courses can be counted as the equivalent of one full course towards the degree of A.B.; but neither of them can be counted otherwise for the degree.

MATHEMATICS.

- S1. Mr. LOVE. — Plane Trigonometry. — Logarithms. — Problems in the calculation of heights, distances, and areas, and in sailing. 5 times a week, for 6 weeks. 1 So., 1 Sc. Total 2.
- S2. Mr. LOVE. — Elementary Solid Geometry. 5 times a week, for 6 weeks. 2 Sc. Total 2.

ENGINEERING.

- S1. Mr. TURNER. — Surveying, Plotting, and Topographical Drawing. — Johnson's Theory and Practice of Surveying. — Geodesy. 6 times a week, for 6 weeks. 2 Sc. Total 2.

This course corresponds to Engineering 4a [2 of 1893-94], and when counted for a degree is subject to the same restrictions.

- S3. Mr. MOSES. — Draughting and Descriptive Geometry. — Problems in Geometrical Drawing. — Isometric Drawing. — Perspective. 6 times a week, for 6 weeks. 1 Gr., 1 Sc. Total 2.

PHYSICS.

- S2. Mr. SABINE. — Experimental Physics. — Measurements in Mechanics, Sound, Heat, Light, Electricity, and Magnetism. — Laboratory work. 6 times a week, for 6 weeks. 2 Se., 1 So., 5 Sc. Total 8.

This course corresponds to Physics C, and to the advanced requirement in Physics for admission.

GEOLOGY.

- S1. Mr. LADD. — Elementary Geology : at Cambridge. Exercises. 5 times a week, for 6 weeks. 1 Ju., 3 So., 2 Sc., 1 Sp. Total 7.

This course is parallel to Geology 4, and is accepted as its equivalent in preparation for more advanced courses.

- S2. Professor BRIGHAM and Mr. KUMMEL. — Advanced course of field work in Stratigraphical Geology : at Utica, N. Y., Catskill, N. Y., and Meriden, Conn. 6 times a week, for 6 weeks. 1 So., 3 Sc. Total 4.

This course is open to those who have taken Geology 4 or S 1, or who possess an equivalent amount of training in Geology. Students intending to take it are recommended to take also Geology 2 and 8 in preparation. It is required as a preparation for Geology 22a, and will be accepted as a preparation for Geology 9 and 15.

In the Announcement of Courses of Instruction for 1895-96, issued in the spring of 1895, a large number of the courses offered for the preceding year were announced to be repeated, but, in the case of some of these courses, modifications were made in their subjects, and the instructors giving them were changed ; — some courses offered for the preceding year, but not regularly given in every year, were replaced by courses, alternating with them, which had been named but not offered in the Announcement for 1894-95 ; — and the following courses, which are either new, or are newly revived after a considerable interval, or have material alterations of title or plan, were named, all being offered for election in 1895-96 except those of which the titles are enclosed in brackets : —

Courses primarily for Undergraduates or for Students in the Lawrence Scientific School: —

English 30. — Forensics and Debating. — Asst. Professor BAKER and Mr. HAYES.

French 2a. — French Prose and Poetry. — La Fontaine. — Corneille. — Racine. — Molière. — Beaumarchais. — Alfred de Musset. — Balzac. — Composition. Messrs. WRIGHT and BABBITT.

This course is conducted in French.

Architecture 2b. — Descriptive Geometry. — Shades and Shadows, Perspective, Stereotomy. Mr. V. A. WRIGHT.

Military Science 1¹. — The operations of war, military history, organization, tactics, logistics, strategy, and military law. — Lectures. — Required reading and reports. *Half-course*. Lieutenant ROBINSON.

Military Science 2². — Military engineering, fortification, ordnance, and gunnery, uses of electricity in warfare. — Required reading and problems. *Half-course*. Lieutenant ROBINSON.

Courses for Graduates and Undergraduates:—

Latin 9. — Practice in Latin expression and style (exposition and argument). — Original essays in Latin. *Half-course*. Professor GREENOUGH.

Philosophy 15. — The chief types of Ethical Thought, with special reference to the schools of Socrates and Kant. — Lectures, private reading, and theses. Dr. SANTAYANA.

History 2. — Political History of Greece to the Roman Conquest. Dr. BOTSFORD.

[History 3. — Political History of Rome to the Reign of Diocletian. Dr. BOTSFORD.]

Omitted in 1895-96.

Government 13. — The History of European Law. — Early Germanic Law. — Frankish Reforms. — Mediaeval French and German Law. — Revival of the Roman Law. — Modern Codes. Mr. F. B. WILLIAMS.

Economics 4². — The Theory of Statistics. — Applications to Social and Economic Problems. — Studies in Movements of Population. *Half-course*. Dr. JOHN CUMMINGS.

Chemistry 9¹. — Advanced Quantitative Analysis. *Half-course*. Asst. Professor RICHARDS.

Chemistry 10². — Gas Analysis. *Half-course*. Asst. Professor RICHARDS.

Geology 13. — Invertebrate Palaeontology. — Lectures and laboratory work. Dr. JACKSON.

[Geology 19. — Climatology. — Lectures, library work, and reports. *Half-course*. Mr. WARD.]

This course will not be given until 1896-97.

Courses primarily for Graduates:—

Semitic 20b. — Hebrew Grammar. Professor TOY.

Classical Philology 23. — The Tragedies of Aeschylus. Professor GOODWIN. To be omitted in 1896-97.

Classical Philology 31². — The elements of Oscan and Umbrian. *Half-course*. Professor ALLEN.

To be omitted in 1896-97.

[Classical Philology 38. — The Comedies of Aristophanes. Professor WHITE.] Omitted in 1895-96.

Classical Philology 40². — The Physical Theories of the Stoics. — Seneca (Naturales Quaestiones), with collateral reading in other authors. *Half-course*. Mr. PARKER.

To be omitted in 1896-97.

Classical Philology 41¹. — Cicero's Correspondence. *Half-course*. Professor SMITH.

To be omitted in 1896-97.

Classical Philology 42. Introduction to the Critical Study of Homer. — Lectures, reading, and short investigations. Professor ALLEN.

To be omitted in 1896-97.

Classical Philology 45¹. — The Bacchides of Plautus. *Half-course*. Professor LANE.

English 29. — The English Novel from Richardson to George Eliot. *Half-course*. Professor A. S. HILL.

[English 20^b. — English Literature in its relation to Italian Literature in the Sixteenth Century. Mr. FLETCHER.]

Omitted in 1895-96.

German 21. — History of the German Language. *Half-course*. Asst. Professor VON JAGEMANN.

German 20^c. — Seminary; Modern German Section. Interpretation of the Second Part of Goethe's Faust. Asst. Professor FRANCKE.

History 16². — Federal History of Switzerland from the Fourteenth Century to the present time. *Half-course*. Asst. Professor HART.

This course will not be given in 1896-97.

[History 17. — Constitutional History of Athens. Dr. BOTSFORD.]

Omitted in 1895-96.

History 18. — Constitutional History of the Roman Republic to the Social War. Dr. BOTSFORD.

Music 6. — Advanced Canon and Fugue and Free Composition. Professor PAINE.

Mathematics 19¹. — Picard's *Traité d'Analyse*, Vol. I. *Half-course*. Asst. Professor BÔCHER.

Mathematics 19². — Functions defined by Linear Differential Equations. *Half-course*. Asst. Professor BÔCHER.

American Archaeology and Ethnology 20. — A course of special research in archaeology and ethnology, requiring three years for its completion. Professor PUTNAM and Dr. DORSEY.

Besides the courses thus added to the announcement, several half-courses were converted into full courses.

The new department of Mineralogy and Petrography having been established, six courses, heretofore classed either under the head of Chemistry or under that of Geology, are now brought together under the newly instituted title.

Several courses not previously counted for the degree of A.B. were opened to candidates for that degree. Among these were the course numbered 1 under the head of Anatomy, Physiology, and

Physical Training, and the two courses (replacing the one course announced for 1894-95), under the head of Military Science. Some additions have been made also to the list of those Summer Courses which may be counted towards the degree of A.B. or S.B. Of the courses in Architecture, Engineering, and Anatomy, Physiology, and Physical Training, a large number are intended primarily for students in the Scientific School, and cannot be counted for A.B.

It will be seen from the above list of new courses that little change is made from year to year in the courses intended primarily for undergraduates, while those of the most advanced group are constantly undergoing considerable modifications.

In the year 1894-95, Professors Toy, Wright and Taussig, Assistant Professors Francke and Wendell, and Mr. Fletcher were absent from the University on leave. Those gentlemen have now returned to the University, and Professors Dunbar, Palmer, and Münsterberg have leave of absence. Assistant Professor Sanderson and Messrs. Conant and Lamont have withdrawn from the University. Professor J. H. Beale (Law), Messrs. A. B. Nichols (German), C. T. Copeland (English), and F. B. Williams (Roman Law), and Dr. A. C. Garrett (English) have been added to the Faculty of Arts and Sciences. Messrs. H. L. Smyth (Geology), W. C. Sabine (Physics), and G. P. Baker (English) have been appointed Assistant Professors.

Professor Dunbar, in his report for the year 1893-94 as Dean of the Faculty of Arts and Sciences, enters into a full discussion of the questions engaging the attention of the Faculty relative to the requirements for the degrees under their charge. The Faculty voted, 28 November 1894, that a committee of eleven members be appointed to consider the Forms and Grounds of the Degrees of A.B. and A.M.; and that committee was directed to take charge of various questions previously referred to different committees of the preceding year. Professor Dunbar was appointed chairman of the new committee, and was a prime mover in its work. He was unfortunately, however, obliged by ill-health almost entirely to relinquish this with other duties during the latter half of the year. The Committee presented a report, 7 May 1895; and this report is still under discussion in the Faculty.

The subject of the requirements for admission to the Freshman Class of Harvard College is one which demands reconsideration from

time to time at the hands of the Faculty. The present system of requirements went into operation in the year 1887. Recent elaborate discussions of the objects and limits of secondary education and of the proper form and nature of the preparation for college having brought this important subject into prominent notice, the Faculty voted, 18 December 1894, that a committee be appointed to consider the Requirements for Admission to Harvard College. This committee, like the last named, has eleven members. Professor C. L. Smith is chairman. The committee has not yet made its report.

The Faculty gave some time, at various meetings during the year, to the consideration of a proposition to the effect that: "Any Doctor of Philosophy or of Science, who shall be approved for the purpose by the department in which he mainly studied for his degree, may be authorized by the President and Fellows to give instruction under the direction of the Faculty of Arts and Sciences." This proposition was an attempt to give practical validity, under some definite system, to a clause which has long stood as one of our regulations; that: "Any person on whom the University confers the degree of Doctor of Philosophy or Science is thereby recognized as qualified to give instruction to candidates for this degree in the department in which he has taken the degree." The precise terms in which a rule having this purpose ought to be framed were, however, found to present difficulty; and the Faculty have as yet arrived at no satisfactory agreement on the subject.

The admission to candidacy for the degree of Ph.D. or S.D. of a student engaged in the higher study of Medicine, from the point of view of scientific investigation, and not from that of one merely preparing himself to be a practitioner, was another subject which was considered at some length by the Faculty. In the course of their discussion, they sought advice from the University Council, in order to obtain the views of members of the other Faculties of the University. The question is obviously one which may well be generalized, so as to apply also, in suitable cases, to students, from the point of view of pure learning, in the higher philosophical and historical regions of Theology or Law. At some at least of the German universities, the degree of Ph.D. is now given for studies formerly referred to the Faculties of Theology, Law, and Medicine, and is no longer restricted to those studies which traditionally belong to the Faculty of Philosophy; and in America, where the degrees given in Professional Schools do not necessarily imply devotion to scholarship

or science, a wide use of the degree of Ph.D. seems strongly called for in the interests of higher learning. The Faculty voted, 18 June 1895, "that there be added to the Committee on Honors and Higher Degrees in the Division of Natural History representatives of those departments of the Medical School wherein studies of a scientific non-professional kind are prosecuted; and this with the intention of providing an arrangement whereby students registered in the Graduate School and studying at the Medical School may proceed to the degrees of Ph.D. and S.D."

The Faculty devoted much time, at several meetings held in the months of February and March, and again at a meeting in the month of May, to the consideration of questions connected with the regulation of inter-collegiate games of football. A satisfactory permanent adjustment of the athletic interests in our colleges to that development of the intellectual and moral life for which colleges exist is far from having been yet accomplished. It is deeply to be regretted that so many university graduates, who might do much to promote the true, healthy, and manly pursuit of college athletic sports, unthinkingly join with an irresponsible public to bring them forward into exaggerated prominence, to degrade them into mere contests for the name of victory and the glory of a side, and to stimulate in them, by fictitious enthusiasm, a spirit often ungenerously partisan, sometimes brutal and ignoble.

JAMES MILLS PEIRCE, *Dean*.

DECEMBER 1895.

THE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR, — I have the honor of making my report on the condition of Harvard College during the academic year 1894–95.

The number of students at the beginning of the year was sixteen hundred and sixty-eight: —

Seniors	327
Juniors	348
Sophomores	425
Freshmen	399
	<hr/>
	1499
Special Students	169
	<hr/>
	1668

These figures show a gain of twelve over the preceding year: —

	Gain.	Loss.
Seniors	4	..
Juniors . . . . .	..	4
Sophomores	31	..
Freshmen . . . . .	..	26
Special Students	7	..
	<hr/>	<hr/>
Total gain	42	
Total loss	30	
	<hr/>	<hr/>
Net gain	12	

Early in the year one Sophomore and one Special Student died. Later one Freshman left College with an injury which proved fatal.

Three hundred and sixty-four persons, of whom forty-seven were not registered as Seniors, received in June the degree of Bachelor of Arts. The losses and the gains in the three younger classes between November, 1894, and November, 1895, may be learned from the following tables: —

	November, 1894.	Loss.	Gain.	November, 1895.
Class of 1896 . .	(Juniors) 348	65	77	(Seniors) 366
Class of 1897 . .	(Sophomores) 425	117	29	(Juniors) 337
Class of 1898 . .	(Freshmen) 399	54	98	(Sophomores) 443
		<hr/>	<hr/>	
		236	204	
<hr/>				
Net loss in the three classes between Nov., 1894, and Nov., 1895 32				

	Class of 1896.	Class of 1897.	Class of 1898.	Total for three classes.
LOSSES.				
Left College before the end of the year . .	8	17	17	42
Left College at the end of the year	31	12	10	53
Were "dropped" and left College	7	6	7	20
Entered a lower class	5	41	17	63
Entered a higher class	14	41	3	58
Total loss	65	117	54	236
GAINS.				
From higher classes	6	8	47	61
From lower classes	40	3	5	48
Newly admitted	31	18	46	95
Total gain	77	29	98	204
Net loss	0	88	0	88
Net gain	12	0	44	56
Net loss in the three classes				32

No student with admission conditions is advanced from the Sophomore to the Junior class; but a student thus held back may remove the conditions in his third year and become a Senior in his fourth. These facts account for the large contribution made by the class of 1897 to the classes of 1898 and 1896. Of the thirty-one students in the class of 1896 who left College at the end of the year, twenty-five have leave of absence, and will be candidates this year for the Bachelor's degree. Most of these students are now members of the Law School.

The next table shows the losses and the gains in the number of Special Students since December, 1894:

In attendance, December, 1894	169
Left College before the end of the year	24
Left College at the end of the year	60
Entered a College class	27
Total loss	<u>111</u>
Returned to College, 1895	62
Newly admitted	<u>99</u>
In attendance, November, 1895	161
Net loss	8

The Special Student is often decried as a mere circumventor of admission examinations, unrepresentable at the front door of the College, but, for the sake of his tuition-fee, cheerfully admitted at the back. It is worth while, therefore, to show why he exists, what he has been, and what he is.

“The courses in Harvard College,” says the University Catalogue of 1894-95 (p. 211), “are open to persons who give satisfactory evidence of their fitness to pursue the particular courses they elect, although they have not passed the usual examinations for admission to College. These students are known as Special Students; they are members of the College from the time of their admission, but are not candidates for the degree of Bachelor of Arts.” In theory, then, the Special Student is a specialist, not attempting the regular College course and not looking for the regular College diploma; in reality, as a former chairman of the Committee on Special Students observes, “these specialists are generalists; they want introductory courses in various general lines, but pursue no subject very far. Real specialists are found chiefly in the Graduate School.” Moreover, the Special Student of to-day means to get the Bachelor’s degree if he can. The Special Student described in the University Catalogue is the rarest kind of Special Student to-day.

The name *Special Student*, superseding *Unmatriculated Student*, first appeared in the Catalogue of 1882-83. The number of Special Students between that time and this may be seen in the following table:

1882-83	46	1889-90	144
1883-84	67	1890-91	141
1884-85	70	1891-92	169
1885-86	110	1892-93	149
1886-87	96	1893-94	162
1887-88	141	1894-95	168
1888-89	145	1895-96	162
Total number in fourteen years			1770
Yearly average			126

In November, 1886, after a year in which the number and the incapacity of the Special Students had become alarming, the Faculty adopted a new scheme for their supervision. “Special Students,” it voted, “are admitted to College by a Committee of the Faculty, to whom their choice of studies must be submitted for approval at the beginning of each year; and their work is carried on under the constant supervision of this Committee.”

Valuable as this vote was in providing that the admission of Special Students should not be casual, or their choice of studies preposterous, or their work intermittent, it was more valuable in its recognition of two important principles : first, that the College should furnish a clew to the labyrinth in which a strange youth wanders during his first few days at the University ; and, next, that the teacher has a constant duty to the individual student and the individual student has a claim on the teacher. The vote stands for personal interest of teachers in pupils ; and the committee established by it was the forerunner of the Committee on the Reception of [New] Students and the Committee of Advisers for Freshmen.

The Committee on Special Students has absolute power to admit or reject, and, with due consideration of the rights of individual instructors, entire charge of the Special Student's studies. It can put him on probation for idleness or incompetency ; and, though it cannot close his probation and dismiss him without a vote of the Faculty, its confidence in the support of the Faculty gives it great persuasiveness when it advises a student to withdraw. It has shown itself powerful, efficient, and wise. It is, moreover, a constant protector of the students under its care, resenting the imputation that they are inferior persons with inferior rights.

Appointed with the duty of giving a fair chance to earnest persons of defective training, the Committee finds its greatest difficulty in sifting the applicants for admission, since the very applicants that it is bound to help cannot always be prophetically distinguished from dull persons best fitted for manual labor, or from portable athletes, or from petted weaklings. In all these cases the pressure on the Committee may be equally strong. Private tutors, chagrined by the failure of their pupils at the regular examinations for admission, urge sickness, nervousness, and hard luck, guaranteeing that these boys, if once let into College, will show that they belong there. The boys themselves, their parents, and personally interested College officers, join the private tutors in tempting the Committee to barter reason for irrational hope. As a matter of fact, College work, so far from removing or disguising mental disability, reveals and emphasizes it ; and unearned admission to College privileges, so far from promoting industry, begets blind self-satisfaction in the present and blind disregard of the future. The lazy and well-to-do Special Student finds that the little accident of intellectual unfitness is no social drawback even in College ; and that, out of College (even if he is turned out), he shall still be "a Harvard man" for life. To reduce the danger of admitting persons academically worthless, the

Committee has devised an admirable system of correspondence. No Special Student is admitted without satisfactory testimony to his character and industry; and no testimony is satisfactory unless put into writing and sent directly to the Committee without passing through the applicant's hands. The applicant names persons able to tell about him and his work; the Committee immediately sends letters of inquiry; and the testimony evoked by these letters is usually so candid and specific as to keep out the undeserving applicant and to throw much light on the merits and the needs of the deserving. The success of this system of correspondence has caused its adoption in the committee that admits Freshmen by examination.

Rejected candidates for admission by examination and other persons having in view the Bachelor's degree are theoretically the least desirable Special Students. To guard against such persons the Committee at one time exacted from many applicants the declaration that they would not be candidates for regular standing. Soon, however, it abandoned this policy as a breeder of ephemeral promises and an unfair hindrance to those students in whom the intellectual life of the University wrought an honest change of purpose.

It should never be forgotten that in admitting Special Students at all the Faculty expresses its faith that a youth for whom our admission examinations are a misfit may yet merit a university education. Even men who are blind to this truth as a general principle see it (perhaps more clearly than others do) in the case of their own sons; and every reasonable man sees it when he traces the career of some of these unpromising youths. Just as the Lawrence Scientific School, established for persons unable or unwilling to get into Harvard College, promptly justified itself by the intellectual distinction of its early graduates, so the body of Special Students may already point out among its members men worth all the labor expended on them — and, what is more, all the labor expended on their incompetent mates.

Special Students, as seen to-day, are of three kinds: first, and rarest, the specializing students for whom the category was designed; second, rejected candidates for admission to the Freshman class, allowed to become Special Students on trial, with the understanding that they must gain admission to a regular class in one year or perhaps in two; third, students of some maturity and training who, without taking admission examinations, have applied for admission to a College class. Professor W. M. Davis, who was chairman of the Committee from the time of Professor Shaler's resigna-

tion in 1890 till the first of September, 1895, regards this third kind of Special Students as "the most profitable." "They often come," he says, "from smaller colleges, without sufficient record to serve as basis for action by the Committee on Admission from Other Colleges. It is true that their course of study [for the single year in which they are Special Students] is often patchwork; but it is better patching than they get elsewhere. It is distinctly to their advantage to come to larger opportunities." Though unable to gain immediate admission to regular standing, these persons often get from the Committee on Admission from Other Colleges assurance that they shall receive credit for some of their former College work if they complete in Harvard College a satisfactory year of special study. As Special Students, therefore, they shape their course with a view to combining the record of work at another college with the record of their first year at Cambridge and entering at the end of the year a regular class. This is what Professor Davis has in mind when he speaks of their course of study as "patchwork." We should probably have more of these students if the University Catalogue did not continue to declare that Special Students "are not candidates for the degree of Bachelor of Arts."

Though, after all the precautions of the Committee, many Special Students prove incompetent, the present policy of the Committee is justified by the number that gain regular standing. Of necessity the Special Students are an incongruous collection of men, — a "job lot," they have been called; yet, taken together, they do as honest work, if not as brilliant, as the members of any College class. They are always on trial, bound always to show that they belong in the University; and without a special vote of the Committee their tenure ends, as a matter of course, with the academic year. The rapidly transient character of this body of students shows how fast the Committee drives out the idlers and advances the workers to regular standing. Through the devoted labor of this Committee the College need no longer look with suspicion on the Special Student.

The present Freshman class is the largest in the history of the College: —

Admitted by examination in 1895	412
before 1895	27
from other colleges	1
from a higher class	17
from the Special Students	5
<hr/>	
Total	462

Sixty-nine persons who took in June some of their Final Examinations for admission did not take the remainder in September. Besides these, five hundred and fifty-five (fifty more than in 1894) took Final Examinations. Of the five hundred and fifty-five, four hundred and twenty already had Preliminary certificates; sixty-seven divided the examinations between June and September; thirty-eight took all their examinations in June; and thirty took all in September. It is noteworthy that the number of "Postponers" who withdrew before September is nearly twice as large as in 1894; and that the number of "Postponers" who completed the examinations is in both years exactly the same:—

	Admitted.	Admitted "Clear."	Rejected.
June	364	180	57
September	102	26	32
Total	466	206	89
Total rejected	89	..	..
	555	..	..

Two of the rejected candidates passed the examinations and could doubtless have obtained old-fashioned certificates of moral character; but they could not stand the test of references. In the two tables that follow, these two persons are omitted.

The candidates chose their plans of admission as follows:—

Plan (a): All the Elementary Studies and at least two Advanced Studies; fifteen hours of examination	227
Plan (b): All the Elementary Studies except either German or French, and at least three Advanced Studies; sixteen hours of examination	288
Plan (c): All the Elementary Studies except either Greek or Latin, and at least four Advanced Studies, including Advanced Mathematics; seventeen hours of examination	37
Plan (d): All the Elementary Studies except either German or French and either Greek or Latin, and at least five Advanced Studies, including Advanced Mathematics; eighteen hours of examination	1
	553

Plan (a) has begun once more to gain on Plan (b); Plan (c) shows an increase of three candidates since 1894; and Plan (d) languishes, with one candidate (who failed).

The next table shows the comparative success of the four plans. Next to the large percentage of failure in Plan (d), which has already been explained, the most striking thing in the table is the small percentage of failure in Plan (b):—

	Admitted.	Rejected.	Percentage of Failure.
Plan (a)	188	38	16.7
" (b)	254	34	11.8
" (c)	23	14	37.8
" (d)	0	1	100.

Of the five hundred and fifty-five candidates, four hundred and eighty offered Ancient History rather than Modern, and three hundred and fifty-two Experimental Physics rather than Descriptive.

In the table showing the relative attractiveness of the Advanced Studies, German has passed Solid Geometry, Logarithms and Trigonometry, and Chemistry; but this change in relative position means not so much an accession to German as a defection from the other studies : —

1893.	1894.	1895.
1. Latin.	Latin.	Latin.
2. Greek.	Greek.	Greek.
3. Latin Composition.	Latin Composition.	Latin Composition.
4. Greek Composition.	Greek Composition.	Greek Composition.
5. French.	French.	French.
6. Solid Geometry.	Solid Geometry.	German.
7. Log. and Trig.	Log. and Trig.	{ Solid Geometry.
8. German.	Chemistry.	{ Log. and Trig.
9. Chemistry.	German.	Chemistry.
10. Algebra.	Algebra.	Algebra.
11. Analytic Geometry.	Analytic Geometry.	Analytic Geometry.
12. Physics.	Physics.	Physics.

The next table gives the details on which the foregoing table is based : —

Number of candidates offering	1893.		1894.		1895.	
	493		505		555	
	Per cent.		Per cent.		Per cent.	
Advanced Greek	364	74	339	67	374	67
Advanced Latin	449	91	430	85	463	83
Greek Composition	261	53	271	53	295	53
Latin Composition	337	68	315	62	344	61
Advanced German	84	17	66	13	79	14
Advanced French	160	32	141	28	203	36
Logarithms and Trigonometry	105	21	86	17	77	13
Solid Geometry	110	22	92	18	77	13
Analytic Geometry	10	2	12	2.4	10	1.8
Advanced Algebra	18	4	23	4	17	3
Advanced Physics	2	0.4	9	1.8	2	0.3
Chemistry	81	16	71	14	57	10

It will be seen that since 1894 no subjects but German and French have gained in percentage, and that no subject but French has gained significantly; that Greek and Greek Composition have held their own; and that, whether in percentage or in actual numbers, every subject in Mathematical or Physical Science has fallen off.

The next two tables show, for each study, the percentage of failure, (*A*) in the complete records of the candidates, including the records of their successful Preliminary Examinations, and (*B*) in their records at Final Exhibitions only. In Descriptive Physics the percentage is still uncomfortably high; in Elementary and Advanced French it is uncomfortably low. The striking percentage in Advanced Physics is accounted for, as usual, by the scarcity of candidates:—

(<i>A</i>)	1890.	1891.	1892.	1893.	1894.	1895.
ELEMENTARY STUDIES.						
English	12	14	17	13	9.5	9.2
Greek	9	6	6	7	6.5	5
Latin	3	2	4	7.5	4	2.5
German	12	13	35	25	22	21
French	11	11	10	8	7	3
History (Ancient)	6	11	24	10.5	6	5
History (Modern)	18	10	19	12	12.5	10.2
Algebra	11.5	10	12	10	12.5	14.8
Plane Geometry	17	17	22	20	25	15.6
Physics (Descriptive)	23	25	44	30	34	41
Physics (Experimental)	14	9	12	17	15	11.6
ADVANCED STUDIES.						
Greek	10	8	8	13	17	13
Latin	27	24	16	19	22	23.7
Greek Composition	17	23	24	27	17	19.3
Latin Composition	23	23	9	9	19	12.5
German	18	31	25	21	16.7	17.7
French	24	20.5	14	21	13	7.3
Logarithms and Trigonometry	40	33.5	34	40	23	36.3
Solid Geometry	31	16	23	32.5	33.5	24.6
Analytic Geometry	37.5	22	29	33.5	16.7	30
Advanced Algebra	45.5	37	43	11	26	23.5
Advanced Physics	11	80	14	50	33.3	0
Chemistry	0	7	3	3.5	4	7

(B) ELEMENTARY STUDIES.			ADVANCED STUDIES.		
	1894.	1895.		1894.	1895.
English	9.5	9.2	Greek	17	13
Greek	19.5	15	Latin	22.5	24.3
Latin	12.5	8.5	Greek Comp.	21	26
German	32.5	31.6	Latin Comp.	26	17.7
French	13.5	7.6	German	21	20.5
History (Ancient) . . .	15	13	French	16.5	9.5
History (Modern) . . .	19.5	21.6	Log. and Trig.	22.5	37.6
Algebra	31	32	Solid Geometry	36.5	24.5
Plane Geometry	34	21.6	Analytic Geometry . . .	18	30
Physics (Descriptive) . .	40	45	Advanced Algebra . . .	33.5	23.5
Physics (Experimental)	17	15	Physics	33.5	0
			Chemistry	5	7.5

Four hundred and seventy candidates took Preliminary Examinations :—

Number of candidates who received certificates for examinations occupying	1890.	1891.	1892.	1893.	1894.	1895.
Less than five hours . . .	5	13	4	2	7	6
Five hours	51	41	53	49	40	56
Six "	59	55	74	83	55	52
Seven "	76	80	92	90	99	75
Eight "	80	67	84	75	102	89
Nine "	29	46	48	58	74	63
Ten "	8	13	18	20	24	18
Eleven "	6	9	6	11	11	20
Twelve " . . . . .	..	2	..	6	5	3
Thirteen "	3	..	3	..	2	3
Fourteen " . . . . .	..	..	..	..	..	1
Sixteen " . . . . .	..	..	..	..	..	1
Received certificates . .	320	327	382	394	419	387
Failed	56	101	78	73	82	82
Total number of candidates	376	428	460	467	501	469

The number of Preliminary candidates is smaller than in 1894; and, since the number of those who failed to get certificates is the same in both years, the number of certificates has diminished. It seems likely that many candidates who should have taken Preliminary Examinations offered themselves as Postponers and failed. (See p. 85.)

“Credits” at Final Examinations show a decrease of forty-one since 1894. In Elementary Latin, September again brought forth more credits than June; in Advanced Physics the number of credits is equal to the number of candidates; in English the solitary credit among five hundred and fifty-three persons signifies, according to the sympathies of the reader, either the growth of parsimony in the examiners or the spread of mediocrity among the examined.

	1893.		1894.		1895.	
	June.	Sept.	June.	Sept.	June.	Sept.
ELEMENTARY.						
English	11	3	4	..	..	1
Greek	14	17	13	12	15	18
Latin	9	26	9	13	8	33
German	12	7	9	6	8	6
French	4	8	7	7	14	6
History (Ancient)	10	4	9	1	..	..
History (Modern) . . . . .	..	2	3	1	1	1
Algebra	10	4	16	13	7	4
Plane Geometry	16	3	12	1	16	5
Physics (Descriptive)	4	..	5	3	2	1
Physics (Experimental)	19	2	23	1	34	2
	109	76	110	58	105	77
ADVANCED.						
Greek	51	4	91	8	71	7
Latin	39	8	69	7	31	5
Greek Composition	3	1	4	..	1	1
Latin Composition	8	2	3	..	..	2
German	7	2	6	..	1	6
French	8	4	15	6	19	8
Logarithms and Trigonometry	1	..	3	..	..	..
Solid Geometry	1	1	4	..	3	1
Analytic Geometry . . . . .	..	1	..	..	..	..
Algebra	2	1	..	..	2	1
Physics . . . . .	..	1	1	..	2	..
Chemistry	8	3	12	7	19	1
	128	28	208	28	149	32
Total number of “Credits” in Final Examinations	237	104	318	86	254	109

The table showing the percentage of failure in each Preliminary study exhibits several interesting details. English, after a long interval, reappears as a Preliminary subject with an almost prohibitory percentage of failure. The Preliminary books in this subject

show the same inferiority to the Final books that they showed in 1887 when the Preliminary examination in English was abandoned. The percentage in Descriptive Physics is not pleasant to contemplate ; and the percentage in Advanced Physics is startling to such readers as do not know that in this subject there was but one candidate.

ELEMENTARY.		ADVANCED.	
English	41.7	Greek	26.6
Greek	11.6	Latin	34.7
Latin	20.6	Greek Composition	28.7
German	14.	Latin Composition	25.4
French	23.3	German	19
History (Ancient)	13.1	French	10.4
History (Modern)	17.	Logarithms and Trigonometry	63.6
Algebra	40.	Solid Geometry	58.3
Plane Geometry	20.9	Analytic Geometry	Not offered.
Physics (Descriptive)	65.3	Algebra	10
Physics (Experimental)	14.1	Physics	100
		Chemistry	42.8

The next table shows the number of “credits” won at these Preliminary Examinations : —

ELEMENTARY.	June.	Sept.	ADVANCED.	June.	Sept.
English . . . . .	..	..	Greek	3	..
Greek	102	1	Latin	1	..
Latin	96	5	Greek Composition . . . . .	..	..
German	12	..	Latin Composition	4	..
French	75	..	German	4	..
History (Ancient)	2	..	French	13	1
History (Modern)	2	..	Log. and Trig. . . . .	..	..
Algebra	40	..	Solid Geometry	2	..
Plane Geometry	6	1	Analytic Geometry . . . . .	..	..
Physics (Descriptive)	2	..	Algebra . . . . .	..	..
Physics (Experimental)	15	..	Physics . . . . .	..	..
			Chemistry . . . . .	..	..
	352	7		27	1
				352	7
				379	8
				8	
Total				387	

In 1894 the total number of credits won at Preliminary Examinations was five hundred and three.

The members of the Administrative Board of Harvard College for 1894-95 were: the Dean of the College; Professors Bartlett, de Sumichrast, Lanman, Royce, Gross, Schilling, Morgan, Howard, Cummings, Marsh, and Osgood; Doctors Marcou and Davenport; and Messrs. Torrey and Baker.

At the request of the Board the Faculty delegated to it the power of dealing with admission conditions under Faculty rules. It was thus immediately called upon to administer the new rule that requires admission conditions to be removed before the Junior year. For failure to comply with this rule, twenty-four members of the class of 1896 were held as Sophomores. In a single case one condition (in Plane Geometry) was forgiven outright, on the ground of exceptional obstacles to its removal by the student and exceptional rank in College studies. Even this concession to high general record was made by the closest possible vote. A second Sophomore year, it should be understood, does not necessarily delay graduation, since on the completion of three years' work and the removal of all admission conditions the two-year Sophomore becomes at once a Senior.

The effort to keep students at work was persistent and not wholly unsuccessful. On the twelfth of November six Freshmen were put on probation; on the nineteenth, eleven more — together with one Junior and three Sophomores. A vote on the third of December led to the withdrawal of one idle and cumbersome Freshman; and immediately after the Mid-Year Examinations the probation of seven Freshmen, three Sophomores, and one Junior was closed. The probation of two more Freshmen was closed in May.

In the course of the year one Junior was expelled for assaulting a fellow-student; one Freshman was dismissed for lying; one Junior, three Sophomores, four Freshmen, and one Special Student were required or persuaded, through the action of Board or Dean, to leave the University. Expulsion and dismissal, though they belong to the Faculty only, are commonly the result of a recommendation from the Board.

My last report described an interesting but ticklish experiment in the treatment of petty cheating. Since this experiment, after a few months' trial had wrought no visible improvement, it was summarily abandoned; and, that students might have fair notice of the revival of an old policy, the following vote was published: —

“The Administrative Board of Harvard College, holding that the handing in, by a student, of written work not his own, is dishonorable and unworthy of a member of this University, proposes hereafter to separate from the College a student guilty of such conduct.”

Six students were suspended for this offence; and one suffered the same penalty for petty dishonesty at an examination.

Every disciplinary officer must have been struck by the paucity and the futile severity of College penalties. Chief among these penalties are exclusion from a course, probation, suspension, dismissal, and expulsion. The exclusion of an idler from a course may expedite the work of the course and disembarass the excluding teacher; but it frequently deprives the excluded student of the discipline that he most needs — the discipline of having to do the work he has neglected. Probation, though effective if not used too freely, is uneven in its significance, serving mainly as a bugbear to musicians, actors, and athletes. Suspension, in its old form of rustication, had excellent possibilities. When all students took the same prescribed four years' course, which included nothing but elementary work, a scholarly country minister could look after a rusticated student with some efficiency; but now, when no teacher can pretend to cover all the studies of the elective pamphlet, and when many elective courses assume that the student has access to the best of libraries or laboratories, available places of rustication may be counted on one hand. Moreover, modern rustication, which requires a teacher or a corps of teachers highly skilled, is the privilege of the rich. Suspension without rustication has little to commend it. Too often it betrays to the College, and, what is worse, to the student himself, the pusillanimity of a father whose one anxiety is, not to strengthen his son's character, but to conceal, by whatsoever prevarication, his son's disgrace. In such cases suspension means living in or near Boston, with the constant companionship of College friends and without the control of College laws. Dismissal or its equivalent, the closing of probation, rids the College of evildoers and occasionally effects their reform. When a youth whose glory — whose ostentation even — has been his connection with Harvard College finds the door suddenly shut against him, and awakes to the bitter truth that he is an outsider, he can sometimes look at himself with an outsider's eyes, see what he has thrown away, and bend resolutely to the task of winning it back; or through long hours in some office or factory he may catch the unlooked-for happiness of earning his bread. Yet too often dismissal seems to turn a helpless boy adrift upon the world. If the prodigal would go to his father, there might be hope; but frequently his first instinct is to go almost anywhere else, and his father will let him go, rather than reveal his dismissal to the neighbors. Dismissal, when all is said for it, is too drastic for most purposes; and expulsion is almost too relentless for any. Gradually an adminis-

trative officer moves toward one or the other of two opposing theories of College discipline: the theory of purging the College of the shiftless and the vicious, and the theory of keeping everybody but the fool and the criminal, in the effort to make him as nearly as possible a man. The first theory is attractively simple; the second calls for the time and the strength of those who can ill spare them, and for the sacrifice, in teachers, of the higher learning to the spirit of the helper of men. No one accepts the second theory absolutely; for every one sees that the salvation of some students is in leaving College for a place of inevitable toil, and that others whose cases are not hopeless cannot be kept with safety to their fellows: but in a College filled with youths of whom many are far from home for the first time, the claims of the second theory cannot be silenced. A third theory—that a University is for learning only and should not concern itself with the character of its students except in cases of public scandal—is practicable and perhaps necessary in professional schools, but has no place in a College. For College purposes, I believe more and more in few penalties and unremitting personal interest of teachers in their pupils' welfare. If this fails utterly, the student should go where, as a matter of course, work begins early and ends late; and where the relation of industry to success is a palpable fact.

It is a mistake to think that personal interest in students is put out of the question by the size of Harvard College. Much as has been said about the isolation of new students at a great University, their loneliness like that of a stranger in a great city, their lack of that personal care supposed to be found in small colleges exclusively, the fact remains that every earnest youth in Harvard College can find devoted helpers among his teachers. The isolated student has himself to thank for his isolation. Houses are open to him; time will be lavished on him; patient ears will listen to him—in a degree incredible to those who do not know the inner life of Harvard College. How can it be otherwise in a College whose prime object is to treat men as individuals and to minister to individual needs? Hence it is that the mechanical operation of penalties becomes more and more repellent and instructors work more among the students themselves, urging the strong to help the weak. It is uphill work at best, and more or less in the dark; the weak are too weak, the strong are not strong enough, and the instructors may want tact and wisdom: but the spirit is right.

The Faculty of Arts and Sciences began the academic year by granting leave of absence to twenty-five Seniors who had completed

or nearly completed the requirements for the degree of A.B. In such cases the student commonly registers himself in the Law School, and if any College work is demanded of him, takes it as a Law Student. This division of work between the College and a professional school commits the student to a nearly impossible service of two masters. In the remnant of his College work he sees only a petty hindrance to his professional career; and he needs all his time for study that leads straight to professional life. Whatever the final settlement of the three-year question, every friend to sound learning hopes that the student's work will be left with clean edges; and that he will not be tempted, as he now is, to regard College courses as so many things counted off before the main purpose of life begins, rather than as work done deliberately with an unmistakable bearing on that main purpose.

Early in the year the Faculty voted that candidates for admission to Harvard College might present Elementary English as a Preliminary subject (see p. 89), and that the time allowed for the examination in Elementary English should be two hours. Two weeks after this vote it adopted the new requirements in English suggested by the Philadelphia conference of May, 1894. Early in the year, also, it revised the College elective courses regularly open to Freshmen and established the principle that the power of admitting Freshmen to other courses should lie with the instructors most concerned, and not with the Administrative Board. It voted, further, that "dropped" Freshmen should have the ordinary elective rights of second-year students, and should not be obliged to get the instructors' permission for taking courses not regularly open to Freshmen.

The relation of the College to the Lawrence Scientific School is not quite distinct, since many courses form an equally natural part of preparation for the degrees of A.B. and of S.B. Last year a student who had completed in the Scientific School all the requirements for the degree of Bachelor of Arts, appeared as a candidate for that degree, though he had never been a member of the College. Experience showed, also, that it was possible for a student to vibrate between the Scientific School and the College, entering at the beginning of each year whichever he might find the less embarrassing to his immediate wishes. Some students take advantage of the easier admission requirements at the Scientific School to gain a foothold in the University, who yet have in view from the beginning the degree of Bachelor of Arts, and can make up later the admission requirements of the College more readily than they can undergo the mathe-

mathematical work demanded for the degree of Bachelor of Science. Since it is for the interest of both the College and the Scientific School that every student should be registered where he belongs, the Faculty voted, in December, that "In order to be recommended for the degree of A.B. a student, unless he be a member of the Graduate School, must have been registered in Harvard College as a candidate for that degree for at least one year." A corresponding vote was passed in regard to the degree of S.B. It will be seen that these votes concern not merely the candidacy of a student in one of these parts of the University for a degree in the other, but the candidacy of a Special Student in either part for either degree.

Besides slight changes in the Regulations, the Faculty effected a useful change in the Rules relating to College Studies. Some years ago when the academic freedom of the students had alarmed the governing Boards, and in particular the Board of Overseers, the following vote was passed:—

"Any choice of elective courses which calls for attendance at more than three lectures or recitations in those courses on any one day of the week must receive the written approval of the Dean."

The object of this rule was, first, to prevent the student from having clear days in which he might leave Cambridge; and, secondly, to save him from lectures when he was, so to speak, saturated for the day, and could absorb no more. Quite illogically, the rule took no account of prescribed studies; it failed to appreciate in laboratory courses and courses involving research at the Library the advantage of days unbroken by lectures; and it ignored the fact that with a complicated and diversified elective system, and with only six days in the week, hundreds of students cannot intelligently steer clear of such a choice as it discouraged. Its chief visible effect was to pack the College office on the busiest days of the year with students whose business was worth neither their time nor the Dean's. The rescinding of this rule has given unqualified relief.

A more important change in the Rules relating to College Studies concerns the order of a student's duties at the beginning of the academic year. In an institution as large and as complex as Harvard College it is not easy to start work promptly; but, through improvements introduced several years ago by a special committee on the opening of the College year, the promptness of our start has become remarkable. The scheme of the Committee required the student to hand in his list of elective courses when he registered himself on the first day of the first term, and to enroll himself in each

course at its first meeting. A representative of each Department kept consultation hours on the Wednesday before College opened; and on Thursday morning, the first day of the year, every teacher offering a course under the Faculty of Arts and Sciences might be found at some appointed place in or near the College yard. Since a circular told students just where each instructor could be found, no time was lost.

In many respects this plan was admirable; its weakness was the overcrowding of the first day, the off-hand election of unsuitable courses, and the enormous number of early petitions for changes of elective work. To meet these evils, the Faculty, at its last regular meeting in June, adopted for the coming year a scheme whereby the student enrolls himself in a course before he formally elects it, hands in his list of studies not on Thursday but on Saturday, and has time to judge roughly what a course and an instructor are like before he commits himself to them for the year. When the details of this scheme have been carefully worked out, its merits may outweigh its faults. As it now stands, it provides the Recorder with no simple and accurate method of ascertaining promptly the membership of any course.

At the last meeting before Commencement Day, the Faculty votes its recommendations for those degrees that are its peculiar care; and its practice has been to discuss one by one the cases of Seniors with flaws in their titles to the degree of Bachelor of Arts. In a body so large as the Faculty this discussion of the details of a student's record is neither intelligent nor just. The Administrative Board of Harvard College, through its new power of dealing with admission conditions, has made some progress in simplifying the problem of the Faculty; but it might well go further, deciding, like the Administrative Board of the Lawrence Scientific School, whom to recommend for a degree and whom not to recommend, and reporting its recommendations to the Faculty without comment. In such matters a representative body of sixteen teachers can act more deliberately and consistently than the Faculty of Arts and Sciences.

L. B. R. BRIGGS, *Dean*.

THE LAWRENCE SCIENTIFIC SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR, — During the academic year 1894-95 the conditions of the school, so far as they can be presented in a statistical form, were as follows :

Number of students registered at time of publication of catalogue . .	308
Number of students registered after the publication of catalogue . .	13
Total enrollment	321

For the six years past, the enrollment, as noted in the catalogue, has been as follows :

1889-90	68	1892-93	180
1890-91	88	1893-94	280
1891-92	118	1894-95	308

The proportion of regular students, *i.e.*, candidates for degrees in the several departments, to special students has rapidly increased, as is shown by the following table :

Year.	Regular Students.	Special Students.
1890-91	35	53
1891-92	48	70
1892-93	100	81
1893-94	142	138
1894-95	204	104
1895-96	236	104

The number of candidates taking the preliminary and final examinations for the School during the past three summers, has been as follows :

	June.	Sept.	Total.
1893-94	37	34	71
1894-95	61	70	131
1895-96	133	89	222

The facts noted in the tables given above show a constant growth in the resort of students to the School, and a similar, though less regular increase, in the proportion of those who attend with the purpose of completing some one of the four years' courses of instruction. The recent decrease in the proportion of special students, a decrease which is particularly noticeable since the year 1893-94, has been due to the greater care exercised by the Administrative Board in scrutinizing the applications of those who have sought to

enter without examinations. The result of this policy has been to reverse the numerical relations of those two classes of students to each other during the last five years.

The reduction in the rate of increase in the total registration of the school during the last two years, has been due, in part, to the policy which has been adopted concerning the admission of special students, but apparently, in larger measure, to the diminished resources of the families from which the students of this school are drawn. This is shown by the fact that many persons who were admitted to regular standing at the beginning of the academic year have stated that they were compelled, for the lack of means, to postpone the beginning of their attendance. In several instances these persons have temporarily resorted to colleges or scientific schools near their homes with the intention of transferring themselves to this School at the end of the first or the second year.

The records of the admission examinations, which are given in the tables, for the last three summers, show that this School has begun to commend itself to the academies and other institutions which fit pupils for college. Four years ago the attendance on these examinations was so limited as not to be made a matter of record. This year the number in the June and September examinations, no account being taken of duplications, was two hundred and twenty-two.

The discipline of the School has been satisfactorily maintained. In no instance has the Administrative Board found it necessary to bring a case of discipline before the Faculty; sufficient control has been obtained by the use of the limited powers which are delegated by the Statutes to the Board. No student has received a heavier penalty than probation; probation was closed in only five cases. With one exception, all the penalties were inflicted for inadequate performance of duty.

At the end of the year twenty-six men classed as special students were informed that they would not be allowed to return to the School unless they passed the examinations required to attain regular standing. Of these, the greater part made up their deficiencies, three were re-admitted as Specials by the vote of the Board, for the reason that on account of illness or other unavoidable hindrances they had not been able to conform to the requirement.

At the end of the year seventy-one men in regular standing, whose records were imperfect, were not advanced to the next class. This action was taken in order to enforce the sound rule that students should not enter the Senior year with a burden of work carried forward from

the earlier years. The additional rule was also applied that no student in Engineering should be allowed to advance beyond the Freshman year unless the grade which he had attained in the mathematical course required in that year was "satisfactory," which is construed to mean that his mark in the course of the year is not below Grade C. This rule, which has been strictly enforced, was called for in order to have the men made quite ready for those subjects which they are required to study in the second year. The effect of enforcing this rule has been to deter a number of men from continuing their course in the School for the reason that it thereby required them to prolong the term of study by one year.

The resources of the four-year courses in Engineering have been much enlarged by the opening of the laboratory of that department, which, as noted in the last report, has been installed in the Old Gymnasium. This establishment is regarded by the Chairman of the Department as sufficient for the present needs, as soon as certain small additions are made to the apparatus. It should be noted, because of the public interest in the improvement of our roads, that this laboratory contains a set of appliances used in the determination of the values of road materials; the most important part of this apparatus has been devised and constructed in the laboratory. The results obtained are believed to be much in advance of those which have been attained elsewhere. The experiments made to determine the quality of the road materials used by the Massachusetts Highway Commission have been made in this establishment; and that Commission has paid the salary of the person who is detailed for this experimental work. It has thus come about that the portion of the laboratory here referred to not only serves the need of the instruction in road engineering which is given in the School, but is of service to the Commonwealth.

The organization of the Department of Architecture has been advanced in several noteworthy respects. Large additions have been made to the collections of casts, models, and photographs; so that at the present time the greater part of the appliances required in the instruction is in hand. The wooden building in which this department is temporarily lodged has been provided with suitable heating apparatus and toilet arrangements, which it previously lacked. Electric lights have been introduced, so that the drawing-rooms can be kept open in the evening. In its present condition the building is tolerably well suited to the needs of the teachers and classes of the department. It is, however, small, and cannot be expected much longer to accommodate the men who desire to

attend the instruction in Architecture. It is, moreover, remote from the Library and the Art Museum. It should also be observed that the structure is of wood, and therefore cannot be properly guarded from fire. The collections which it now contains are very valuable; and their destruction would be a calamity.

The Department of Anatomy, Physiology, and Physical Training, has, through the services of its artificer, much extended its collections of apparatus for illustration and inquiry; it is now in a condition where it can provide not only for the adequate instruction of undergraduates, but also for the needs of more advanced students who may wish to undertake research work. By vote of the Faculty the elementary course of Hygiene in this department has been opened to the undergraduates of the College.

The Library of the School, now in effect that of the department of engineering, and actually, though not nominally, under the charge of the professor of engineering, has made considerable gains during the year both in the number of books and in the arrangement of the collections. The accessions have amounted to 689 volumes (of which 351 volumes were transferred from Gore Hall); the present total of volumes is 4559. During the year this library has been open to students from 9 A.M. to 10 P.M. It has been much resorted to by those who lodge at a distance, and who, but for this accommodation, would have had no suitable place to study in the intervals between their appointments.

At present the School is in face of two urgent needs. The first and most pressing of these needs is that of a laboratory of applied geology, to be devoted mainly to the use of the students and teachers in mining geology. The other is that of a building to accommodate the growing needs of the other departments of engineering.

The needs in mining engineering can be met by the erection of a small structure, which would not cost more than \$8000. The necessary apparatus, would not, at the outset, demand more than \$7000. The aim of the establishment should be not to duplicate the usual assemblage of appliances used in mining and in the treatment of ores, but to provide means for investigating the physical conditions of geological phenomena with due regard to both scientific and economic problems. A plan has been formed for the installation of this laboratory; it is exceedingly desirable that provision should be made for it before the beginning of the academic year 1896-97.

N. S. SHALER, *Dean*.

THE GRADUATE SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR, — I have the honor of presenting the annual report of the Dean of the Graduate School for the academic year 1894-95.

Number and Classification of Students.

The number of students admitted to registration in the School was two hundred and eighty-one; of whom two hundred and sixty-four were classed as Resident Students, and seventeen as Non-Resident Students. Of the Resident Students thus registered, nine, however, were members of the School for very short periods, and are not counted in the following enumeration. The number of Resident Students is accordingly reduced to two hundred and fifty-five; and the total number, to two hundred and seventy-two.

The following table exhibits the usual classification of the students belonging to the School, and is given, for convenience of comparison, for the two successive academic years, 1893-94 and 1894-95 : —

	1893-94.	1894-95.
Resident Students doing full work in the School for the whole academic year	162	161
Resident students not doing full work or not working for the whole year as resident students	86 248	94 255
Non-Resident Students holding fellowships	10	12
Non-Resident Students not holding fellowships	1 11	5 17
Students whose studies chiefly lie in		
I. Semitic Languages and History	6	5
II. Ancient Languages (Classics and Sanskrit) . .	34	37
III. Modern Languages (including English Language and Literature and Comparative Literature) .	42	52
IV. Philosophy (including Education and Teaching) .	35	39
V. History and Political Science	44	49
VI. The Fine Arts (including Architecture)	5	3
VII. Music	1	2
VIII. Mathematics	19	21
IX. Physics	4	9
X. Chemistry	12	12
XI. Natural History	38	35
XII. American Archaeology and Ethnology	2	1
Unclassed Students	17 259	7 272

First-year students	151	149
Second-year students	63	67
Third-year students	31	39
Fourth-year students	10	13
Students in a fifth or later year	4 259	4 272
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A.B.'s and S.B.'s of Harvard University and of no other institution	103	98
A.B.'s and S.B.'s (and holders of similar degrees) of other institutions and also of Harvard University . .	26	35
Students not holding the Harvard degree of A.B. or S.B.	130 259	139 272
<hr/>		
Students holding the Harvard degree of A.M., Ph.D., or S.D.	69	80
Students holding the Harvard degree of A.B. or S.B., but not of A.M., Ph.D., or S.D.	83	81
Students holding no Harvard degree in Arts, Philosophy, or Science	107 259	111 272
<hr/>		

A few comments seem desirable on some of the figures in the above table, as these figures will be found to throw light on the uses of the Graduate School for different classes of students.

Of the ninety-four Resident Students classed as not doing full work for the whole academic year, thirty-one are persons who registered in the School later than the last day of October, or who withdrew from it before the close of the academic year. The remaining sixty-three were registered during the whole year; but were not doing full work as students. Most of these sixty-three persons were engaged in teaching or other occupations, and were devoting only a part of their time to study in the Graduate School; — some without the intention of becoming candidates for a degree; others hoping to obtain the degree of Master of Arts after two or three years of work in carrying out a programme of study for that degree. Again, a few students who were not doing full work had already completed a term of residence as candidates for a degree, and were engaged in supplying a deficiency in some part of their work for that degree. I have not intended to include among the ninety-four students here enumerated, however, such persons as were engaged in special work of research or preparing theses as candidates for the degree of Doctor of Philosophy or Doctor of Science, and were really solely devoted to study as Graduate Students, though in some cases not registered at my office as fully engaged in work. It is not, indeed, always possible for me to discriminate these cases correctly from those of persons not fully occupied in work, and my figures should perhaps therefore be slightly amended in the one direction or the other. There

appears to be need of some change in the form of registration at the office of the Dean of the Graduate School, and of returns made by instructors to that office, in order to render possible an accurate line of demarcation between those members of the School who are entirely occupied with their work as students, — whether by taking courses of instruction or otherwise, — and those who for perfectly legitimate reasons do not profess to be giving their whole time to studies in the School. The distinction is an important one, and it ought to be in the power of the Dean of the Graduate School to make it with certainty in all instances; but I have each year found it impossible to avoid some cases of doubt.

The distinction made in the above table and in the lists of the School, between Resident and Non-Resident Students does not depend entirely on place of abode. The term Resident Students comprehends all students registered in the School who are regularly in attendance on instruction at the University, or in any way carrying on studies here. Such students must live near enough to Cambridge to conform to this condition, but do not necessarily lodge within the precincts of the University, as these would ordinarily be understood. The Administrative Board have, however, been careful not to accept a constructive residence as fulfilling the statutory requirement of residence *for a degree*, except in cases where the attendance has been so regular and constant as to leave no doubt that the intention of the requirement has been complied with, — in such cases, indeed, as occur, without question, even among undergraduates of the College. One growing class of students, however, calls for special consideration. A considerable number of persons actively engaged in teaching, in towns and cities within easy reach of Cambridge, are attracted to the University by the courses in Education and Teaching offered in the Division of Philosophy. Such persons can complete the requirements of study for the degree of Master of Arts by continuing their membership in the School for several years, coming regularly to the University once or twice a week and doing all the work of the courses they elect. Their daily occupations in their profession do not interrupt their studies as Graduate Students; but, on the contrary, directly promote and strengthen them. The case seems analogous to that of a student in Natural History who leaves the University for a part of his period of study, that he may carry on independent investigation in the field. The Administrative Board, recognizing the force of these considerations, have recently adopted the view that they may admit students of this class to candidacy for the degree of Master of Arts, in cases

which appear to them to rest on sufficient grounds, accepting their attendance for a series of years as constituting a year's residence for the degree. Whether the same indulgence can safely be extended to students in other departments of work is, however, questionable. On the one side, it is urged that the rule of residence is not intended to enforce a merely bodily presence during the whole period of twenty-four hours of each day, but only an actual participation in the study and discussion carried on in the class rooms and laboratories. It would, however, certainly be dangerous to admit to candidacy for a degree, without careful examination of each case, persons who are largely occupied in such outside work as is of a nature to distract their attention from the proper business of a student. It seems to me important, therefore, to proceed with caution in the direction here indicated; though it is doubtless true that the standards of the several degrees are now so well established that a rigorous insistence on all their formal conditions is less necessary than it formerly was.

Non-resident holders of fellowships register as Non-Resident Students in the Graduate School. They are required to be in frequent communication on the subject of their work with some instructor in this University, to have accurate addresses constantly on file at the office of the Dean of the Graduate School, to keep him always well-informed of what they are doing in fulfilment of the purposes of their appointment, and to present an annual report to the Faculty of Arts and Sciences of their progress in their studies. They pay no fees to this University. A few students, not holding fellowships, also register as Non-Resident Students. The Administrative Board have never encouraged this practice, since it offers but slight advantages to the student, — continued registration (after the completion of the prescribed term of residence) never having been required of persons who mean to be candidates for a degree, — and may have some appearance of improperly swelling the list of members of the School. But a student sometimes desires, for special reasons, to remain in regular communication with former teachers here, while continuing his studies elsewhere; and, under such circumstances, there seems to be no sufficient ground for declining to retain his name on the books of the University. A student thus registered is required, like a non-resident fellow, to carry on his studies in frequent consultation with some instructor in this University. He is charged a fee of thirty dollars annually.

Most students in the Graduate School are pursuing studies which constitute in each case a more or less definite field of work. A large

proportion of the students are distinctly specialists. Yet many students, especially in their first year, take some studies outside of their principal department; nor is it always easy to assign the field of work of a given student to any one of the regularly established Divisions of the Faculty of Arts and Sciences. A student of Philology may be engaged in both Ancient and Modern Languages; a student of Sociology, both in Economics and in Philosophy; a student of Literature, in Philology, History, Philosophy, and the History of Art and of Music; a student of Mathematical Physics, both in pure Mathematics and in Physical Theory; a student of Mineralogy, both in Chemistry and in Geology. The assignment of students to the several Divisions of the Faculty in the above table is, therefore, made with some difficulty, and cannot be regarded as absolute; nor must it be inferred that the students who are left unclassified are necessarily without a definite central point of interest. The figures of the table are, however, to be relied on as presenting a generally accurate account of the occupations of students in the School.

An inspection of that part of the above table which gives the number of students in each year of membership in the School shows that rather less than half of the first-year students of 1893-94 were second-year students in 1894-95, even if we disregard the fact that not all the second-year students of 1894-95 took their first year in 1893-94. On the other hand, rather more than a half of the second-year students of 1893-94 seem to have been third-year students in 1894-95. In 1892-93, the number of first-year students was 125, and the number of second-year students was 59. The numbers of second-year and third-year students for 1893-94, namely, 63 and 31, are almost exactly the halves of 125 and 59 respectively. It appears, therefore, that at present, of all the students who enter the Graduate School, about one half remain for only one year, when many of these students attain the degree of Master of Arts; and that of those who remain for two years, a full half remain for at least three years. The seemingly growing proportion of those who continue in the School for three years, or for more than three years, may be partly due to the increasing number of students who are not doing full work in any one year, and are therefore obliged to prolong their period of membership in the School, in order to complete their programme of study. The number of third-year, fourth-year, and fifth-year students is often incidentally swelled by the appointment to non-resident fellowships of persons who have already been for some time Resident Students in the School.

The next division of the table shows the extent to which the Graduate School draws its membership from among graduates of other institutions. Nearly two-thirds of the whole number in 1894-95 were students of this description; and more than a half of the whole number were not, even after graduating at other colleges, Bachelors of Arts or Science of Harvard University, nor had they, in most cases, ever been undergraduate students here. Thirty-five graduates of other institutions had, however, also received the degree of A.B. or S.B. from Harvard University; but of these persons a considerable number had no doubt been drawn to Harvard, in the first place, by the attraction of the Graduate School, and some, indeed, had taken the degree of A.B. as members of that School.

The last division of the table shows that eighty students continued their studies in the Graduate School after having attained the degree of A.M., Ph.D., or S.D.; and that one hundred and eleven students, or more than two fifths of the whole membership, had no Harvard degree in Arts, Philosophy, or Science.

As throwing further light on the breadth of constituency of the School, I subjoin a table of the birthplaces of those who were students in the School for the academic year 1894-95. From this table it will be seen that the North Western States of the Union are well represented among our students; while the South, the Far West, and Canada send us a fairly good detachment, which we can perhaps hardly expect to see much larger in the near future. It is worth while to point out that the students registered in the School who were born in New England, but now live in other parts of the country, are doubtless decidedly more numerous than those who have removed from remote States to New England, unless for the temporary purpose of attending the University. But an enumeration of the present home residences of students would not be instructive, since a considerable number of students, being men of mature age and often being married men, could only be named as having their homes in Cambridge while they are members of the Graduate School, though really belonging to some distant community. Of the students of foreign birth, some are young men of American parentage who chance to have been born abroad; some are Europeans by birth and extraction who have become Americans; and a few are citizens of a foreign country, to which they mean to return after completing their studies here.

Students born in the New England States	109
Students born in other Northern States east of the Mississippi River	97
Students born in Southern States east of the Mississippi River	20
Students born in States west of the Mississippi River	17
Students born in the Dominion of Canada	16
Students born in other foreign countries	13
Total number of students	272

Two deaths have occurred among the students of the Graduate School for the year 1894-95.

Arthur Moodey Seelye was a son of President L. Clark Seelye, D.D., of Smith College, Northampton. He was born at Amherst, Massachusetts, in the year 1870. He took the degree of A.B. at Amherst College in 1892; and for the next two years was an instructor at the Adelphi Academy, Brooklyn, N. Y. He registered in the Graduate School at the beginning of the academic year 1894-95, and devoted himself to the study of the English Language and Literature. He was a young man of pure character and fine promise, and was regarded with respect and affection by those who knew him. He died during the spring recess, 17 April 1895, through an accident which occurred while he was exploring the woods on the steep declivity of Mount Tom, near Northampton.

Elliot Folger Rogers was a son of James Swift Rogers of Chicago, of the Harvard Class of 1865. He was born at Worcester, Massachusetts, 28 July 1868. He entered Harvard College in 1886, and attained the degree of A.B. *cum laude* in 1890. He had already distinguished himself in several courses of study in the department of Chemistry. He then entered the Graduate School as a student of Chemistry, and attained the degree of A.M. in 1891. During the following year, he was instructor in Chemistry at the Worcester Polytechnic Institute. In 1892, he returned to the Graduate School, and continued his studies as a Resident Student for the two academic years 1892-93 and 1893-94. He attained the degree of Doctor of Philosophy in 1894. The subject of his thesis was "The Atomic Weight of Zinc." This was the result of an investigation carried on in collaboration with Professor T. W. Richards. It was an able piece of work, and has been recently published. In 1894, he was awarded a Parker Fellowship, and for the year 1894-95 carried on studies in Chemistry at the University at Leipzig, being registered here as a Non-Resident Student. Having received, at the close of the year 1894-95, an appointment as Instructor in Chemistry at this University, he entered on the duties of that place at the beginning of the current year. But he died on one of the first days of the

year, 2 October 1895. An autopsy showed that his death was due to an unsuspected disease of the brain, which doubtless resulted from overstudy during his year in Germany, in carrying on a long and disappointing investigation. He was an able and devoted student and an upright man, only too conscientious in his earnest desire to fulfil the expectations of his friends and justify his own ambitions; and his early death is a loss to the science in which he would have been a useful and faithful worker.

Degrees.

The number of students in the Graduate School recommended by the Faculty of Arts and Sciences for any degree, and the number of students in other departments of the University recommended for the degree of A.M. are stated in the following table, for the two years 1894 and 1895:—

	1894.	1895.
Graduate students recommended for A.B.	19	24
Graduate students recommended for A.M.	82	79
Graduate students recommended for Ph.D.	16	16
Graduate students recommended for S.D.	2 119	2 121
Seniors of a preceding year, recommended without further residence or study for A.M.	4	0
Professional students recommended for A.M. on special courses of study	5	8
Professional students recommended for A.M. with a professional degree	24 33	5 13
Total of the above list	152	134
Deduct Graduate students recommended for A.B. . . .	19	24
Total number recommended for A.M., Ph.D., and S.D. .	133	110

One entry in the above table may, unless accompanied by a word of explanation, lead to misconception. It happens that no students received the degree of A.M. in 1895 on the ground of studies pursued as Seniors of Harvard College in a preceding year, and without further residence and study. There were, however, not a few students, still registered at the University, in the Graduate School or in a Professional School, Bachelors of Arts of Harvard College, who presented studies pursued in their Senior year, and not counted for the degree of A.B., among the courses on which they were candidates for the degree of A.M.; and some of these students presented none but such studies for the degree of A.M. In the present unsettled state of the requirements for the degree of A.B., cases of this kind are inevitable. There were such cases in 1894; and

applications have already been granted for 1896. Students who have completed, or nearly completed, at the beginning of their Senior year, the requirements of study for the degree of A.B. cannot be denied the privilege of entering at once on studies looking towards the degree of A.M. It is an incidental consequence which we may hope for from a systematic rule opening the degree of A.B., under suitable conditions, to students who have completed a three years' course of study in Harvard College, that the studies for A.B. and A.M. will be separated; or, at all events, that no student will be allowed to be a candidate for the degree of A.M. without at least one complete year of study carried on after the degree of A.B. has actually been attained. This regulation can easily be enforced, if the normal period of study for the degree of A.M. is fixed at two years.

The practice of conferring the degree of Master of Arts in connexion with a professional degree has been discontinued; except that students who had completed one year of study for the two degrees before the beginning of the academic year 1892-93 retain the privilege formerly open to them. At Commencement 1894, for the last time, members of the graduating classes of the Divinity and Law Schools might be candidates for the degree of A.M. in connexion with that of D.B. or LL.B. The practice lasted one year longer at the Medical School, since that School has a four years' course of study for its degree. Five students, accordingly, graduating in 1895, took the degrees of M.D and A.M. simultaneously and on the same course of study. The practice may now be said to have come to an end in all Schools; but individual cases of persons taking A.M. with a professional degree may still, perhaps, present themselves under the exception noted above.

The total number of persons recommended for the degree of A.M., Ph.D., and S.D. may be classified as follows, with reference to their previous graduation as Bachelors of Arts or Science: —

	1894.	1895.
Harvard Bachelors of Arts or Science, not previously graduated elsewhere	67	46
Harvard Bachelors of Arts or Science, previously graduated elsewhere	22	22
Students not Harvard Bachelors of Arts or Science . .	44 133	42 110
	—	—

Previously to the year 1886, no student was admitted to the Graduate Department except as a candidate for the degree of A.M., Ph.D., or S.D. This system was open to some serious objections,

of which an important one was that it gave undue prominence to the mere attainment of or candidacy for a degree, and hardly seemed to recognize the existence among American students of a pure love of learning for its own sake and for the direct intellectual advantages which result from it. The universities which have done the most to advance knowledge among men have been those which treat the attainment of a degree as a matter of secondary consideration. The old rule of our Graduate Department (now the Graduate School) was a direct obstacle to the development of that department. It raised a serious question at the outset of a young man's study there, not always easy to be solved so early; and, moreover, a graduate of another college could not, under this rule, be admitted at all to membership in the Department until his qualification for candidacy for one of the higher degrees, often involving difficult considerations, and capable of a much more satisfactory determination after a period of study at this University had been passed upon by a Committee of the Faculty.

In 1886, a change was made in the above-named rule; and from that time students have been admitted to membership in the Graduate Department, without reference to any question of candidacy for a degree, on the simple ground of a degree (such as A.B., S.B., Ph.B., Litt.B., or any professional degree) already conferred by an institution in good repute, or on other sufficient *prima facie* evidence of eligibility. Any student in the School may, after his admission, apply for leave to become a candidate for a degree, after having, in the judgment of the Administrative Board and the Committee on Admission from Other Colleges, fulfilled the requirements of admission to the desired candidacy. A corollary to the new practice is that a student in the Graduate School may present himself as a candidate for the degree of Bachelor of Arts, just as he might have done if, under a ruling of the Committee on Admission from Other Colleges, he had entered an undergraduate class of Harvard College, instead of entering the Graduate School. It is in this way that each year a small number of students in the Graduate School receive the degree of A.B. Such students might have been admitted to the Senior Class; and they receive the degree on the same conditions (except that they have more freedom to devote themselves to advanced studies in a specialty, if qualified for such studies) as if they had been so admitted.

The requirement for the degree of Master of Arts has for many years been stated in the Catalogue in such a way as to carry the impression, not unjustifiably, to some minds that the degree rested

on a mere record of excellence in four courses of instruction, and that these courses might be destitute of relation to each other, form no intelligible plan of work, and afford in reality no satisfactory basis of a degree. In the year 1894-95, the Administrative Board of the Graduate School made a revision of the courses of study which they had approved for this degree in the previous academic year, in order to satisfy themselves whether this impression was at all justified by facts. The result of the examination was to show that there was a decidedly greater specialization of study for this degree, and a stronger body of courses offered for it, than they had themselves been aware, and that, with the exception possibly of one or two cases, there was quite as satisfactory an actual requirement for it as it could reasonably be thought desirable to enforce by any standing rule. The Board judged it well, however, to modify the published statement in such a manner as to obviate future misconception on this point, and to ensure the continued maintenance of the high standard for the degree. On the recommendation of the Administrative Board of the Graduate School, the Faculty of Arts and Sciences have accordingly adopted the following statement:—

“The ordinary requirement for the degree of MASTER OF ARTS for a Bachelor of Arts of Harvard University, or for any student who has been accepted, without special conditions, as qualified for candidacy for the degree on the ground of his previous studies, consists of *a full year of residence and study in the Graduate School, devoted to work approved by the Administrative Board of the School as affording suitable preparation for the degree, and completed with high credit.* Special conditions are, however, in some cases imposed on the admission to candidacy of a student who is not a Bachelor of Arts of Harvard University.

“The work approved by the Administrative Board of the Graduate School for the degree of Master of Arts may consist, wholly or partly, of research or special study, either in connexion with or outside of the courses of instruction, carried on under the direction or with the criticism and approval of a specified instructor; or it may be made up of courses of instruction of advanced grade, four such courses being ordinarily required as constituting a full year's work. In any case, the programme of study must form *a consistent plan of work, to be pursued with some definite aim,* although it need not lie wholly in one department or field. A student engaged in research or special study as the principal part of his work may, at the discretion of the Administrative Board of the Graduate School, be referred, as a candidate for the degree of Master of Arts, to the Committee on Honors and Higher Degrees in the Division in which such study lies.

“Studies pursued in a Professional School may be approved by the Administrative Board of the Graduate School as constituents of the scheme

of study offered for the degree of Master of Arts ; but only under the condition that the candidate is precluded from offering any of the same studies, at any time, for a professional degree."

The degree of Doctor of Philosophy requires at least two years of liberal study, after the attainment of the degree of Bachelor of Arts, or counted from a point of advancement in study accepted as equivalent to this by the Committee on Admission from Other Colleges ; and these two years must normally be years of residence at this University. The degree of Doctor of Science requires at least three years of scientific study, after the attainment of the degree of Bachelor of Science, or an equivalent point of advancement in study ; and at least two of these years must normally be years of residence at this University. The degree of Doctor of Science is given only on the ground of studies in the mathematical, physical, and natural sciences ; the degree of Doctor of Philosophy is open to students in these branches, as well as to those in the philological, historical, and moral sciences. The degree of Doctor of Philosophy is here, as everywhere, a degree which belongs to the whole field of learning, and represents the essential unity of the profession which has for its main object the advancement of the boundaries of knowledge, whether on one side or another. Our degree of Ph.D. is, however, founded primarily on the degree of Bachelor of Arts, and therefore requires certain previous studies which are not necessarily implied by the degree of Doctor of Science. It may well be questioned whether the distinction between the two degrees is, under the general principles maintained at this University, any longer one having important significance. I am myself of the opinion that the degree of Doctor of Philosophy, which alone carries a stamp of eminent scholarship recognized throughout the world, ought to be open to all to whom the degree of Doctor of Science is now open, and that the latter degree might well be abolished. A recommendation to this effect was made many years ago to the Academic Council by a committee representing all departments of study ; but the Academic Council was not, at that time, ready to adopt the recommendation.

Both of the degrees here spoken of have always been maintained at a high level at this University. They rest upon attainment, not on the completion of a curriculum. The following paragraphs, taken from the Annual Catalogue, contain the most important points of the requirements for these degrees : —

"The periods of residence and study named above for the degrees of DOCTOR OF PHILOSOPHY and DOCTOR OF SCIENCE must be regarded merely as *minimum* requirements. *The requirements of time for the degrees of*

Doctor of Philosophy and Science are wholly secondary. These degrees do not rest on any computation of time, or any enumeration of courses; although no student can become a candidate for one of them until he has, in the judgment of the Administrative Board of the Graduate School, fulfilled the requirements of residence and study for the prescribed periods.

“The degree of *Doctor of Philosophy* or *Science* is given, not for the mere reason of faithful study for a prescribed time or in fulfilment of a determinate programme, and never for miscellaneous studies, but on the ground of long study and high attainment in a special branch of learning, manifested not only by examinations, but by a thesis, which must be presented and accepted before the candidate is admitted to examination, and must show an original treatment of a fitting subject, or give evidence of independent research.

“Any person on whom the University confers the degree of Doctor of Philosophy or Science is thereby recognized as qualified to give instruction to candidates for this degree in the department in which he has taken the degree, and to advance knowledge in that department by his own investigation.

“A candidate for the degree of Doctor of Philosophy must offer himself for examination in some one of the following Divisions of the Faculty of Arts and Sciences: Semitic Languages and History; Ancient Languages; Modern Languages; Philosophy; History and Political Science; Music; Pure and Applied Mathematics; Physics; Chemistry; Natural History; American Archaeology and Ethnology. Within his chosen Division, he must name some special field of study, approved as sufficient by the Committee on Honors and Higher Degrees in that Division. He is liable to minute examination on the whole of that special field; and is also required to prove such acquaintance with the subject matter of his Division in general as the Committee in that Division shall require.

“A candidate for the degree of Doctor of Science must offer himself for examination on two subjects, or fields of study, in the range of the mathematical, physical, and natural sciences. He must show special attainments in one of these subjects, and is liable to minute examination in the whole ground which it covers; and he is also required to have such general knowledge in the Division to which his special studies belong as the Committee on Honors and Higher Degrees in that Division shall require. His thesis must embody some contribution to science or some special investigation.

“Any student who means to become a candidate for the degree of Doctor of Philosophy or Science must carry on his studies with the approval and under the direction of the Committee on Honors and Higher Degrees in that Division of the Faculty of Arts and Sciences to which his special studies belong. He should give early written notice of his intention to be a candidate to the chairman of the committee; and he should consult the chairman, at suitable intervals, about his plans of study.

“A successful candidate is allowed to print his thesis as one accepted for the degree, with the certificate of approval and the signatures of the approving committee; and either a printed or a written copy of the thesis and the original certificate must be deposited in the Library, and must be open to public inspection.”

The following are the names of the students admitted to the degree of *Doctor of Philosophy* or *Doctor of Science* at Commencement, 1895:—

To Ph.D.

FRANK COLE BABBITT, A.B. *magna cum laude* 1890, A.M. 1892. Res. Gr. Stud., 1890–95.

Philology (Classical Philology). *Thesis*, “*De Euripidis Antiopa.*”

Now a student at the American School of Classical Studies, Athens, Greece.

EDWARD ANGUS BURT, A.B. *summa cum laude* 1893, A.M. 1894. Res. Gr. Stud., 1893–95.

Natural History (Botany). *Thesis*, “*The Development of the Receptaculum in the Phalloideae; with a Systematic Account of the North American Species.*”

Now Professor of Botany, Middlebury College, Middlebury, Vermont.

HARRY EDWIN BURTON, A.B. *magna cum laude* 1890, A.M. 1893. Res. Gr. Stud., 1892–95.

Philology (Classical Philology). *Thesis*, “*De Rebus Sacris apud Aristophanem repertis.*”

Now holding a Parker Fellowship, and a student at the American School of Classical Studies, Rome, Italy.

WILLIAM ERNEST CASTLE, A.B. (*Denison Univ., O.*) 1889, A. B. (*Harvard Univ.*) 1893, A.M. (*Ibid.*) 1894. Res. Gr. Stud., 1893–95.

Natural History (Zoölogy). *Thesis*, “*The Early Embryology of Ciona intestinalis.*”

Now Instructor in Vertebrate Anatomy, University of Wisconsin, Madison, Wisconsin.

BRADLEY MOORE DAVIS, A.B. (*Leland Stanford Jr. Univ., Cal.*) 1892, A.B. (*Harvard Univ.*) 1893, A.M. (*Ibid.*) 1894. Res. Gr. Stud., 1891–95.

Natural History (Cryptogamic Botany). *Thesis*, “*Considerations on the Carposporic Type of Reproduction.*”

Now Instructor in Botany, University of Chicago, Chicago, Illinois.

WILLIAM EDWARD BURGHARDT DUBOIS, A.B. (*Fisk Univ., Tenn.*) 1888, A.B. *cum laude* (*Harvard Univ.*) 1890, A.M. (*Ibid.*) 1891. Res. Gr. Stud., 1890–92. Non-Res. Gr. Stud., 1892–93. Henry Bromfield Rogers Memorial Fellow, 1890–92. Professor of Ancient Languages, Wilberforce University, Wilberforce, Ohio.

Political Science (Constitutional History and Economics). *Thesis*, "The Suppression of the African Slave Trade in the United States of America."

Still Professor of Ancient Languages, Wilberforce University.

JOHN HIRAM GEROULD, LITT.B. (*Dartmouth Coll., N. H.*) 1890, A.B. (*Harvard Univ.*) 1892, A.M. (*Ibid.*) 1893. Res. Gr. Stud., 1892-94 and to 31 December 1894.

Natural History (Zoölogy). *Thesis*, "The Anatomy and Histology of *Caudina arenata*, Gould."

Now Instructor in Zoölogy, Dartmouth College, Hanover, N. H.

JAMES WATERMAN GLOVER, L.B. (*Univ. of Michigan*) 1892, A.B. (*Harvard Univ.*) 1893, A.M. (*Ibid.*) 1894. Res. Gr. Stud., 1892-95. Morgan Fellow, 1892-94.

Mathematics (Analysis and Geometry). *Thesis*, "On the Properties of Functions Defined by the Partial Differential Equation $\Omega Y + k Y = 0$."

Now Instructor in Mathematics, University of Michigan, Ann Arbor, Michigan.

HENRY THEODORE HILDRETH, A.B. *summa cum laude* 1885. Non-Res. Gr. Stud. and Parker Fellow, 1885-88. Res. Gr. Stud., 1888-90 and 1894-95. Professor of Greek, 1890-92, University of Wooster, Ohio. Assistant Professor of Greek, 1892-93, Brown University, Providence, R. I.

Philology (Classical Philology). *Thesis*, "De Usu Plusquamperfecti Indicativi Latini usque ad Augusti aetatem Commentatio."

Now Acting Professor of Ancient Languages, Roanoke College, Salem, Virginia.

GEORGE EDWIN HOWES, A.B. *magna cum laude* 1886, A.M. 1890. Res. Gr. Stud., 1888-90 and 1893-95.

Philology (Classical Philology). *Thesis*, "De Versibus Homericis apud Plutonem et Aristotelem repertis."

Now Professor of Greek, University of Vermont, Burlington, Vermont.

ROBERT MACDOUGALL, A.B. (*McGill Univ., P. Q.*) 1890, A.M. (*Harvard Univ.*) 1893. Res. Gr. Stud., 1892-95. Morgan Fellow, 1894-95.

Philosophy (Psychology). *Thesis*, "The Physical Coefficient of Certain Mental States."

Now holding the Walker Fellowship, and continuing his studies at Berlin, Germany.

KENNETH MCKENZIE, A.B. *magna cum laude* 1891, A.M. 1893. Res. Gr. Stud., 1892-95.

Philology (Romance Languages). *Thesis*, "The Development of Italian Lyric Poetry before the Rise of the *Dolce Stil Nuovo*."

Now Instructor in Modern Languages, Union College, Schenectady, N. Y.

EDGAR PIERCE, A.B. *cum laude* 1892, A.M. 1893. Res. Gr. Stud., 1892-95. Assistant in Psychology, 1892-94. Assistant in Philosophy, 1894-95.

Philosophy (Psychology). *Thesis*, "*The Aesthetics of Simple Forms*."

Now Instructor in Psychology, University of Michigan, Ann Arbor, Michigan.

HARRIS EASTMAN SAWYER, A.B. *cum laude* 1891, A.M. 1894. Res. Gr. Stud., 1892-95. Assistant in Chemistry, 1892-95.

Chemistry (Organic Chemistry). *Thesis*, "*On Aldehydo-pyromucic Acid*."

Now Assistant to Professor Wolcott Gibbs, LL.D., Newport, R. I.

WILLIAM HENRY SCHOFIELD, A.B. (*Victoria Univ., Ont.*) 1889, A.M. (*Harvard Univ.*) 1893. Res. Gr. Stud., 1892-95. Morgan Fellow, 1893-95.

Philology (Anglo-Saxon and Middle English). *Thesis*, "*Studies on the Libeaus Desconus*."

Now holding a Rogers Fellowship, and continuing his studies at Paris, France.

EARLEY VERNON WILCOX, A.B. (*Otterbein Coll., O.*) 1890, A.B. (*Harvard Univ.*) 1892, A.M. (*Ibid.*) 1894. Res. Grad. Stud., 1892-95.

Natural History (Zoölogy). *Thesis*, "*Spermatogenesis of Caloptenus femur-rubrum and Cicada tibicen*."

Now pursuing studies in the Pāli language and literature in Cambridge.

To S.D.

FREDERICK LEVY DUNLAP, S.B. (*Univ. of Michigan*) 1892. Res. Gr. Stud., 1892-95. Assistant in Chemistry, 1893-95.

Chemistry (Organic Chemistry). *Thesis*, "*Diphenyldichlorocronotic Acid and the Constitution of Mucochloric Acid*."

Now Instructor in Chemistry at Yale University.

HERBERT MAULE RICHARDS, S.B. *summa cum laude* 1891. Res. Gr. Stud., 1892-95. Assistant in Botany, 1892-95.

Natural History (Cryptogamic Botany). *Thesis*, "*On some Points regarding the Morphology and Parasitism of Certain Uredineae*."

Now holding a Parker Fellowship, and continuing his studies at Leipzig, Germany.

Fellowships and Scholarships.

Eighteen fellowships and forty-six scholarships were held by students in the Graduate School in the year 1894-95. Twelve of the fellowships were held by Non-Resident Students, who pursued their studies abroad and reported to the Faculty of Arts and Sciences. Six fellowships and all the scholarships were held by Resident Students.

My last annual report contains the names of those who were appointed to fellowships for the year 1894-95. The following is a list

of those who *withdrew* from their fellowships in the course, or at the close, of the year 1894-95. The names of those *reappointed* will be found somewhat later, in the list of appointments for 1895-96:—

Withdrew from the Harris Fellowship.

WALTER RAYMOND SPALDING, A.B. *cum laude* 1887, A.M. 1888. Res. Gr. Stud., 1887-88. Instructor, 1888-92, St. Mark's School, Southborough. Studied *Music* at Paris and Munich, 1892-94. I. year of incumbency. Continued the study of *Musical Theory and Composition* at the National Conservatory of Music at Munich. Now Instructor in Harmony at this University.

Withdrew from the Rogers Fellowships.

CHARLES BURTON GULICK, A.B. *summa cum laude* 1890, A.M. 1891, PH.D. (Philology) 1894. Instructor in Greek, 1892-93. Res. Grad. Stud., 1890-92, 1893-94. I. year of incumbency. Studied *Classical Philology* at the University of Berlin. Now reappointed Instructor in Greek at this University.

GEORGE ANDREW REISNER, A.B. *summa cum laude* 1889, A.M. 1891, PH.D. (Philology) 1893. Assistant in Semitic Languages, 1891-93. Res. Gr. Stud., 1890-93. II. year of incumbency. Pursued *Semitic Studies* at the University of Berlin, 1893-95. Now occupying a *John Harvard Fellowship*, continuing his studies at Berlin, and holding an appointment as Scientific Assistant in the Assyrian Department of the Royal Museum of Berlin.

Withdrew from Parker Fellowships.

GEORGE ASHLEY CAMPBELL, S.B. (*Mass. Inst. of Tech.*) 1891, A.B. *cum laude* (*Harvard Univ.*) 1892, A.M. (*Ibid.*) 1893. Res. Gr. Stud., 1891-93. II. year of incumbency. Pursued the study of *Mathematical Physics* at the University of Göttingen, 1893-95. Now continuing his studies at Paris.

ELLIOT FOLGER ROGERS, A.B. *cum laude* 1890, A.M. 1891, PH.D. (Chemistry) 1894. Assistant in Chemistry, 1893-94. Res. Gr. Stud., 1890-91, 1892-94. I. year of incumbency. Studied *Chemistry* at the University of Leipzig. Appointed Instructor in Chemistry at this University. Died 2 October 1895.

RAYMOND LESLIE WEEKS, A.B. *summa cum laude* 1890, A.M. 1891. Res. Gr. Stud., 1890-91. Instructor in Romance Languages, 1891-93, University of Michigan. II. year of incumbency. Pursued the study of *Romance Philology* at Paris, 1893-95. Now Professor of Romance Languages at the University of the State of Missouri, Columbia, Missouri.

Withdrew from the John Thornton Kirkland Fellowship.

HUGH TALLANT, A.B. *cum laude* 1891, A.M. 1891. III. year of incumbency. Pursued the study of *Architectural Design* at the École des Beaux Arts at Paris, 1892-95. Still continuing his studies at the same place.

Withdrew from the James Walker Fellowship.

CHARLES MONTAGUE BAKEWELL, A.B. (*Univ. of California*) 1889, A.M. (*Ibid.*) 1891, A.M. (*Harvard Univ.*) 1892, PH.D. (Philosophy) 1894. Res. Gr. Stud., 1891-92, 1893-94. Non-Res. Gr. Stud., 1892-93. I. year of incumbency. Studied *Philosophy* at the University of Berlin. Now holding a *John Harvard Fellowship*, and continuing his studies in Paris.

Withdrew from the Morgan Fellowships.

EDWARD ANGUS BURT, A.B. *summa cum laude* 1893, A.M. 1894, PH.D. (Natural History) 1895. Professor of Natural Science, 1885-90, New York State Normal College, Albany, N. Y. Res. Gr. Stud., 1893-94. I. year of incumbency. Studied *Botany* at this University. Now Professor of Botany at Middlebury College, Middlebury, Vermont.

SAMUEL BANNISTER HARDING, A.B. (*Indiana Univ.*) 1890, A.M. (*Harvard Univ.*) 1894. Instructor, 1891-93, Workingman's School, New York, N. Y. Res. Gr. Stud., 1893-94. I. year of incumbency. Studied *History and Economics* at this University. Now Assistant Professor of European History, Indiana University, Bloomington, Indiana.

ROBERT MACDOUGALL, A.B. (*McGill Univ., P. Q.*) 1890, A.M. (*Harvard Univ.*) 1893, PH.D. (Philosophy) 1895. Res. Gr. Stud., 1892-94. I. year of incumbency. Studied *Philosophy* at this University. Now holding the *James Walker Fellowship*, and continuing his studies at the University of Berlin.

WILLIAM HENRY SCHOFIELD, A.B. (*Victoria Univ., Ont.*) 1889, A.M. (*Harvard Univ.*) 1893, PH.D. (Philology) 1895. Res. Gr. Stud., 1892-94. II. year of incumbency. Studied *English and Germanic Philology* at this University. Now holding a *Rogers Fellowship*, and continuing his studies at Paris.

Withdrew from the John Tyndall Scholarship.

CHARLES EDWARD ST. JOHN, S.B. (*Michigan Agric. Coll.*) 1887, A.M. (*Harvard Univ.*) 1893. Assistant in Physics, 1886-92, Michigan State Normal School. Res. Gr. Stud., 1892-94. II. year of incumbency. In 1893-94, pursued the study of *Physics* at this University. Continued it, in 1894-95, at the University of Berlin. Now temporarily resident at Chicago, and continuing his studies with a view to candidacy for the Harvard degree of Doctor of Philosophy.

Withdrew from the Robert Treat Paine Fellowship.

CARLOS CARLETON CLOSSON, JR., A.B. 1892, A.M. 1893. Res. Gr. Stud., 1892-94. II. year of incumbency. In 1893-94, pursued the study of *Economics and Sociology* at this University. In 1894-95, continued the same study at Rennes, France. He withdrew from his fellowship before

the close of the year to accept an appointment, which he still holds, as Instructor in Political Economy at the University of Chicago.

Withdrew from the Henry Lee Memorial Fellowship.

GUY STEVENSON CALLENDER, A.B. (*Oberlin Coll., O.*) 1891, A.B. (*Harvard Univ.*) 1893, A.M. (*Ibid.*) 1894. Res. Gr. Stud., 1892-94. I. year of incumbency. Studied *History and Economics* at this University. He was reappointed to the same fellowship for 1894-95, but resigned the appointment to become Instructor in Economics at Wellesley College. He is, however, still continuing his studies in the Graduate School.

Withdrew from the Ozias Goodwin Memorial Fellowship.

AMOS SHARTLE HERSHEY, A.B. *cum laude* 1892, PH.D. (*Univ. of Heidelberg, Germany*) 1894. I. year of incumbency. Studied *Constitutional and International Law* at Paris.

The appointment to fellowships and scholarships for any academic year belongs mainly to the preceding academic year. I treat it as if it belonged entirely to that preceding year, although it is never completed till after its close; since the whole assignment forms a connected piece of business, on which it would be inconvenient to report piecemeal. I proceed, therefore, to report upon the appointments to fellowships and scholarships for the year 1895-96. But it must be understood that some of the appointments here enumerated have been made since the beginning of the current year.

The regular time of applying for a fellowship or scholarship is in the month of March; and the first assignment of places is made as soon as possible after that time. Those persons who apply in time to be considered in the first assignment are referred to below as "Spring applicants." A considerable number of vacancies arise, from various causes, after the first assignment. Some applicants are unable to come to the University without the aid of better appointments than the Faculty are able to offer them; and the interval of six months from the end of March to the first of October is sure to bring about many changes of plan. In filling vacancies which occur after the first assignment, the Committee on Fellowships and other aids to Graduate Students take into consideration not only the "Spring applicants" not already satisfactorily provided for, but also persons who have applied later. Both in the first assignment and in filling vacancies, they use their utmost endeavors to obtain advice from the various departments and divisions of the Faculty, and to balance the just claims of those departments and divisions, as well as the merits of the different

individual applicants. A preference is given to students who have become known to our Faculty through studies already pursued here; but pains are also taken to select at least a few persons for appointment on the evidence of testimonials and of written specimens of work.

Appointments have been made for the year 1895-96 to twenty fellowships and fifty scholarships. Two of the fellowships have been newly established for this year, and stand on a new footing, being purely *honorary appointments*, and without stipend. Special mention will be made of these honorary fellowships on a later page; and they will not be included in the enumeration exhibited in the following tables, which accordingly apply to eighteen fellowships and fifty scholarships. Of the eighteen fellowships now in question, eleven are held by Non-Resident Students; the remaining seven fellowships and the fifty scholarships are held by Resident Students.

The following tables contain the usual statistics relative to applications and appointments to fellowships and scholarships and to the classification of applicants and appointees, for the two successive academic years, 1894-95 and 1895-96:—

I. *Applications and Appointments.*

	1894-95.	1895-96.
Spring applicants for reappointment or promotion . . .	38	48
Spring applicants for a first appointment	226	212
Later applicants	30 294	49 309
Appointed to fellowships	18	18
Appointed to scholarships	46	50
Appointed instructors or assistants	22 86	21 89
Deduct for repetitions	8	2
	78	87
Entered or continued in the Graduate School without receiving any of the above-named appointments . . .	57	43
Entered undergraduate classes of Harvard College . .	4	13
Entered other departments of the University	6 67	5 61
Applicants who were at the University in the year following their applications	145	148
Applicants not at the University in that year	149	161
	294	309

II. *Classification of Applicants and Appointees.*

	1894-95.		1895-96.	
	Applicants.	Appointees.	Applicants.	Appointees.
Students of Philology	91	20	125	23
Students of Philosophy, History, or Political Science . .	101	18	95	20
Students of Mathematics, Physics, or Chemistry	56	$12\frac{1}{3}$	51	14
Students of Natural History	38	$11\frac{2}{3}$	36	11
Students of other branches, or unclassified	8	2	2	0
	294	64	309	68
Students in the Graduate School	100	$40\frac{2}{3}$	98	45
Students in Harvard College	38	$7\frac{2}{3}$	28	6
Students in other Departments of the University	2	0	3	0
Former students in some Department of the University .	16	$2\frac{1}{3}$	26	9
Persons never previously members of the University . .	138	$13\frac{1}{3}$	154	8
	294	64	309	68
Harvard Bachelors of Arts or Science, not previously graduated elsewhere	46	17	43	18
Harvard Bachelors of Arts or Science, previously graduated elsewhere	22	12	20	8
Graduates of other institutions, not Harvard Bachelors of Arts or Science	177	30	196	34
Undergraduates of Harvard College, not already graduated elsewhere	24	5	23	4
Undergraduates of other institutions and other non-graduates	25	0	27	4
	294	64	309	68

Some slight differences between the figures given for 1894-95 in the above tables and those contained in my last annual report are due to changes made in the assignment of scholarships for that year after the presentation of the report. The fractions in the second table arise from transferences in a few of the scholarships in the course of the year, the fraction representing the portion of the year for which a scholarship was held by a given student.

Only those fellowships and scholarships which are awarded on nomination by the Faculty of Arts and Sciences are included in these tables. Besides these, a few supplementary foundations, named in the Annual Catalogue, are at the disposal of other bodies, and may be given to students in the Graduate School.

No persons are counted in these tables as having received *appointments* but such as accepted and actually held (or are now holding) appointments. In the second table, the columns of appointees include only those appointed to fellowships and scholarships, not those appointed instructors or assistants. The last two divisions of the second table refer to the occupation or academic standing of each applicant in the latter part of the year preceding that for which his application was made; that is, in the spring of 1894 or of 1895 as the case may be.

The following is a list of the persons who have been *appointed to fellowships* for the year 1895-96:—

The Harris Fellowship.

FRED NORRIS ROBINSON, A.B. *summa cum laude* 1891, A.M. 1892, PH.D. (Philology) 1894. Res. Gr. Stud., 1891-94. Instructor in English, 1894-95. I. year of incumbency. Is studying *Celtic Languages* at the University of Freiburg.

The Rogers Fellowships.

FRANK DYER CHESTER, A.B. *magna cum laude* 1891, A.M. 1892, PH.D. (Philology) 1894. Res. Gr. Stud., 1891-94. Assistant in Semitic Languages, 1892-95. I. year of incumbency. Is now pursuing *Semitic Studies* at Damascus, Syria.

WILLIAM HENRY SCHOFIELD, A.B. (*Victoria Univ., Ont.*) 1889, A.M. (*Harvard Univ.*) 1893, PH.D. (Philology) 1895. Res. Gr. Stud., 1892-95. Morgan Fellow, 1893-95. I. year of incumbency. Is studying *English and Modern Languages* at Paris.

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The Parker Fellowships.

HARRY EDWIN BURTON, A.B. *magna cum laude* 1890, A.M. 1893, PH.D. (Philology) 1895. Res. Gr. Stud., 1892-95. I. year of incumbency. Is studying *Classical Philology* at the American School of Classical Studies, Rome.

IRVING WETHERBEE FAY, A.B. *magna cum laude* 1886. Teacher, 1887-92, Belmont School, Cal. Studied Chemistry at the University of Berlin, 1893-94. I. year of incumbency. Is continuing the study of *Chemistry* at the University of Berlin.

HERBERT MAULE RICHARDS, S.B. *summa cum laude* 1891, S.D. (Natural History) 1895. Res. Gr. Stud., 1892-95. Assistant in Botany, 1892-95. I. year of incumbency. Is studying *Botany* at the University of Leipzig.

ARTHUR WISSWALD WEYSSE, A.B. *magna cum laude* 1891, A.M. 1892. PH.D. (Natural History) 1894. Res. Gr. Stud., 1891-94. Assistant in Botany, 1892-94. II. year of incumbency. Is studying *Zoölogy* at Paris.

The John Thornton Kirkland Fellowship.

JAMES SULLIVAN, JR., A.B. *magna cum laude* 1894, A.M. 1895. Res. Gr. Stud., 1894-95. Assistant in History, 1894-95. I. year of incumbency. Is studying *History and Political Science* at Paris.

The James Walker Fellowship.

ROBERT MACDOUGALL, A.B. (*McGill Univ.*) 1890, A.M. (*Harvard Univ.*) 1893, PH.D. (Philosophy) 1895. Res. Gr. Stud., 1892-95. Morgan Fellow, 1894-95. I. year of incumbency. Is studying *Philosophy* at the University of Berlin.

The John Tyndall Scholarship.

WILLIAM DUANE, A.B. (*Univ. of Pennsylvania*) 1892, A.B. (*Harvard Univ.*) 1893, A.M. (*Ibid.*) 1895. Res. Gr. Stud., 1893-95. Assistant in Physics, 1893-95. Is studying *Physics* at the University of Berlin.

The Robert Treat Paine Fellowship.

ENOCH HOWARD VICKERS, A.B. (*W. Virginia Univ.*) 1890, A.B. (*Harvard Univ.*) 1893, A.M. (*Ibid.*) 1894. Res. Gr. Stud., 1893-95. Assistant in Government and Law, 1894-95. I. year of incumbency. Is studying *Economics and Social Science* at the University of Berlin.

The Morgan Fellowships.

CHARLES LEONARD BOUTON, S.M. (*Washington Univ., Mo.*) 1891. Instructor in Mathematics, Washington Univ., 1893-94. Res. Gr. Stud., 1894-95. I. year of incumbency. Is studying *Mathematics* at this University.

ARTHUR STODDARD COOLEY, A.B. (*Amherst Coll.*) 1891, A.M. (*Harvard Univ.*) 1893. Instructor in Languages, 1891-92, Park College, Mo. Res. Gr. Stud., 1892-95. I. year of incumbency. Is studying *Classical Philology* at this University.

HERBERT SPENCER JENNINGS, S.B. (*Univ. of Michigan*) 1893, A.M. (*Harvard Univ.*) 1895. Res. Gr. Stud., 1894-95. Assistant in Zoölogy, 1894-95. I. year of incumbency. Is studying *Zoölogy* at this University.

BORIS SIDIS, A.B. *cum laude* 1894, A.M. 1895. Res. Gr. Stud., 1894-95. I. year of incumbency. Is studying *Philosophy* at this University.

The Henry Lee Memorial Fellowship.

OLIVER MITCHELL WENTWORTH SPRAGUE, A.B. *summa cum laude* 1894, A.M. 1895. Res. Gr. Stud., 1894-95. I. year of incumbency. Is studying *Political Economy* at this University.

The Ozias Goodwin Memorial Fellowship.

KENDRIC CHARLES BABCOCK, LITT.B. (*Univ. of Minnesota*) 1889, A.M. (*Harvard Univ.*) 1895. Instructor in History, University of Minnesota, 1893-94. Res. Gr. Stud., 1894-95. I. year of incumbency. Is studying *History and Political Science* at this University.

The Henry Bromfield Rogers Memorial Fellowship.

ABRAM PIATT ANDREW, JR., A.B. (*Coll. of New Jersey*) 1893, A.M. (*Harvard Univ.*) 1895. Res. Gr. Stud. 1893-95. I. year of incumbency. Is studying *History and Political Science* at this University.

Instructorships and Assistantships.

The first of the above tables shows that a considerable number of the annual appointments to instructorships and assistantships are made from among applicants for fellowships and scholarships in the Graduate School. It is not, however, in general, the wish of the Faculty or the Corporation that a fellowship or a scholarship should be held by one who is at the same time an instructor or assistant. The duties of the instructorship or assistantship commonly interfere, in some degree, with those of the fellowship or scholarship; and, besides this, a wise economy in managing the aids available for students who need help requires, in most cases, the distribution of such aids to as large a number of beneficiaries as possible. The University does not think it well to undertake to pay the expenses of students who have no resources of their own, but only to help out the efforts of those who can themselves supply some part of what they need. In order to put the relation between scholarships and assistantships on a more satisfactory footing, the Corporation have, at the instance of the Faculty of Arts and Sciences, now adopted the rule that the acceptance of an instructorship or assistantship by a student already holding a fellowship or scholarship, or of a fellowship or scholarship by a student already holding an instructorship or assistantship, without a vote of the Corporation permitting the student to hold both places at the same time, shall be held to vacate the place first held. Under this rule, the Corporation have given permission to two students of the current year, as the first of the two tables given above indicates, to hold a scholarship and an assistantship simultaneously; these cases having been considered, and favorably reported on, by the Committee on Fellowships and other aids to Graduate Students.

New Scholarships.

The number of appointments to scholarships for 1895-96 is seen by the tables given above to exceed by four the number of scholarships held in 1894-95. Two of these additional places are due to the transference of a University Scholarship, which remained vacant in 1894-95, to the list of scholarships for the current year; the remaining two are appointments made on new foundations.

One of the two new scholarships has been founded by bequest of the Hon. Leverett Saltonstall, of the class of 1844, who died 15 April 1895. Mr. Saltonstall's will provides that this scholarship may be bestowed on an undergraduate or a graduate student, and may be given, if thought desirable, to a graduate student who is pursuing his studies at a foreign university; and it expresses the desire that it be named the Leverett Saltonstall Scholarship, to commemorate the father of the testator, the Hon. Leverett Saltonstall, LL.D., of the class of 1802, and "his devoted attachment to the University." The scholarship is at present reserved for the use of the Graduate School. Its income is two hundred dollars.

The other new scholarship is one founded by Edward Russell of Boston from yearly gifts made during the years from 1877 to 1895. By desire of the donor, a scholarship has now been established on this foundation for "meritorious students of limited pecuniary resources, whether of the undergraduate or graduate department," and is named the Edward Russell Scholarship, in memory of Edward Russell of the Class of 1759, and of Edward Russell of the Class of 1803, grandfather and father to the founder. This scholarship also is at present reserved for the use of the Graduate School. Its income is two hundred dollars. The fund may be used, under certain circumstances, for the purposes of instruction.

In 1643, Lady Ann Mowlson, of London, founded the first scholarship in Harvard College, by a gift of one hundred pounds "current English money," the income to be paid to some poor scholar until he shall attain the degree of Master of Arts, any kinsman of Lady Mowlson having preference over other scholars. This scholarship fell into abeyance early in the last century, but was reëstablished in 1893, two hundred and fifty years after its foundation, with an income of two hundred dollars. By a recent decision of the Corporation, it may, under the terms of the gift, be continued to a student after his graduation, while studying in the Graduate School for the degree of Master of Arts. But it is assigned primarily to an undergraduate of Harvard College.

The John Harvard Fellowships.

The desirableness of the occasional assignment of an honorary fellowship, or fellowship having no stipend, to a student in the Graduate School, and perhaps of a systematic practice of bestowing such fellowships in suitable cases, has been repeatedly suggested in the Faculty of Arts and Sciences during recent years. Several American Universities, having prosperous and distinguished graduate departments, award such fellowships, under different names; and there are obvious merits in such a mode of proceeding. It affords due distinction to students of eminent ability and scholarship who are, for any reason, not appointed to regular fellowships. Some of the best students fail of appointment to such fellowships, because still better students stand before them. Others are excluded, because there are no vacancies in places which can fitly be assigned to them, in view of the just distribution of benefits to different departments of study. In other cases excellent students cannot even be considered as proper candidates, because their private means render them unsuitable objects of pecuniary assistance, in a university where there is always a far greater number of deserving students having slight resources than it is possible to provide for by any administration of beneficiary funds. Thus a direct discouragement is given to the scholarly ambition of well-to-do students through their exclusion from one of the highest distinctions in the gift of the University; while the fellowship itself loses something of its value as a distinction, by assuming, in the general apprehension of the university public, something of the mere character of an eleemosynary foundation. To a student who goes abroad for the purposes of his study, the appointment to a fellowship is of especial benefit (apart from any income which may accompany it); since it serves as an introduction and passport of very high value to foreign scholars and learned bodies.

Towards the close of the year 1894-95, the Committee on Fellowships and other aids to Graduate Students nominated two persons for appointment to fellowships without stipend; with the requirement, that, if appointed, they should pursue their studies abroad during the whole academic year 1895-96, under the same conditions as to study and report as those imposed on the holders of fellowships having income. The Committee recommended that these fellowships be named *John Harvard Fellowships*. The Faculty of Arts and Sciences adopted the nominations and the recommendation made by the Committee; and the Corporation at once acceded to the

propositions thus transmitted to them. The persons selected for this new and distinguished honor were Doctors of Philosophy of this University, who had been for several years registered in the Graduate School, who had already held fellowships for the purpose of study in Europe, and who wished to continue their studies there. They have not been included in the enumeration and tables given above, as their appointments are of a new kind; but it is possible that no reason will exist for the separation, in future reports of the Dean of the Graduate School. The names of the appointees are as follows:—

The John Harvard Fellowships.

CHARLES MONTAGUE BAKEWELL, A.B. (*Univ. of California*) 1889, A.M. (*Ibid.*) 1891, A.M. (*Harvard Univ.*) 1892, PH.D. (Philosophy) 1894. Res. Gr. Stud., 1891–92, 1893–94. Non-Res. Gr. Stud. and James Walker Fellow, 1894–95. I. year of incumbency. Is studying *Philosophy* at Paris.

GEORGE ANDREW REISNER, A.B. *summa cum laude* 1889, A.M. 1891, PH.D. (Philology) 1893. Res. Gr. Stud., 1890–93. Assistant in Semitic Languages, 1891–93. Non-Res. Gr. Stud. and Rogers Fellow, 1893–95. I. year of incumbency. Is studying *Semitic Languages and History* at Berlin, and is a Scientific Assistant in the Assyrian department of the Royal Museum, Berlin.

The institution of these fellowships seems to me to open up very interesting and important possibilities in the future policy of the University. Even if confined to Non-Resident Students in the Graduate School, and given only to persons of the very advanced attainments of the two gentlemen who have this year been selected for appointment, the fellowships constitute a valuable addition to the means of activity and of influence of this University. It will not, I believe, be thought improper for me to mention that the mere fact of Dr. Reisner's appointment to this position by the University rendered it possible for him to complete his arrangements for continuing his studies in Berlin for another year, and to accept the very honorable offer which had already been made to him of an assistantship in the Royal Museum of that city.

But I believe that the full benefit of the system of John Harvard appointments will be reached only when it attains a much wider extension; that it should be applied to Resident Students as well as Non-Resident Students; that it should not be confined to extraordinary cases, though it should doubtless be administered with a very cautious conservatism; that it should be used for scholarships as well as for fellowships; and that it should be carried over from the

Graduate School into the College also. There was much discussion, a few years ago, about the administration of the College scholarships; and it was urged, with much force, that the restriction of those scholarships to poor students is injurious to the University and to learning. The present scholarships, however, can, in most instances, be given to none but needy persons, under the conditions imposed by their founders; and, if it were not so, it is improbable that either the Faculty or the Corporation would see their way clear, in the existing state of things in our country, to bestow any of them on students of independent means. That the scholarships lose something of their significance as marks of excellence in study, and that excellence in study is in danger of being regarded as an unsuitable object of ambition to the sons of wealthy parents, under this system, is undeniable; though we may congratulate ourselves that neither of these ill effects has as yet gone very far at this University. Holders of scholarships are in fact highly respected throughout our community; and there are many distinguished students who never apply for scholarships. But it is well worthy of consideration whether a system of *John Harvard Scholarships* in Harvard College might not infuse a still better tone into the work of study here, and have some effect in meeting the reproach, which, however little deserved, is often popularly insisted on, that the thoughts of American students are too much absorbed in non-intellectual interests, and that the universities do not offer sufficiently conspicuous and attractive marks of distinction to able and diligent undergraduate workers in the various fields of learning.

Convention of Graduate Students.

A convention of Graduate Students, representing different American colleges and universities, was held in the city of New York, 16 April 1895. The proposal for holding this Convention issued from the Harvard Graduate Club. Student delegates were present from the following fourteen institutions, which offer opportunities for graduate study, namely:—Barnard College, Brown University, Bryn Mawr College, the University of Chicago, Columbia College, Cornell University, Harvard University, Johns Hopkins University, the University of Michigan, the University of Pennsylvania, Radcliffe College, Vanderbilt University, Western Reserve University, and Yale University. Clark University and the College of New Jersey were represented by members of their Faculties. The Universities of California, Minnesota, and Wisconsin, and the Leland Stan-

ford Jr. University, although sympathizing with the purposes for which the Convention was called, sent no delegates.

The following statements of the objects of the meeting is taken from an "Address to Governing Boards of American Universities," issued by the Convention: —

"The general purposes of the Convention were these:

(1) To establish the Handbook of Graduate Courses upon a more satisfactory basis and to obtain a more general coöperation in its editorial management. (2) To consider conditions of graduate study in America, particularly the subjects of intermigration and maintainance of standards for degrees. (3) In general, to advance the interests of higher education by bringing together graduate students from all parts of the country for discussion of topics of common interests."

The Handbook of Graduate Courses here mentioned is a very useful little volume, containing lists of the courses of instruction and study, suitable to graduate students, which are offered by different colleges and universities, with particulars concerning the rules of the several institutions, so far as they affect graduate students. This publication originated with the Harvard Graduate Club, and has received the hearty coöperation of several other Graduate Clubs.

The discussions of the Convention resulted in the adoption of a series of resolutions, which were embodied in the Address above mentioned.

These resolutions are: —

1. That only those who have obtained a bachelor's degree from some reputable college or who furnish proofs of fully equivalent attainments should be eligible as candidates for the degree of Doctor of Philosophy.

2. That the degree of Doctor of Philosophy should only be granted after the completion and publication of a thesis embodying results of original investigation.

3. That regulations should be modified to facilitate the intermigration of Graduate Students, and that accordingly not more than one year of residence should be required in the university where the degree of Doctor of Philosophy is conferred.

4. That the giving of the degrees of Master of Arts, Doctor of Philosophy, Doctor of Science, Doctor of Letters, *honoris causa*, is to be condemned, and the granting of degrees *in absentia* is very much to be deprecated.

The first of these resolutions calls for no remark, as it is conformable to the existing practice of this University. The second resolution demands consideration from us, so far as the word "publica-

tion" is concerned. The rule of this University has been already cited, and is as follows : —

"A successful candidate [for Ph.D. or S.D.] is allowed to print his thesis as one accepted for the degree, with the certificate of approval and the signatures of the approving committee; and either a printed or a written copy of the thesis and the original certificate must be deposited in the Library, and must be open to public inspection."

The *required* publication of the thesis, before the degree is conferred, has long been felt by the Faculty of Arts and Sciences to be a desirable safeguard of the high standard of the degree. In March and April 1891, the Administrative Board of the Graduate School took up the consideration of this matter; but after extended discussion, they arrived at the conclusion that it would be impracticable to impose upon the student the great expense which this publication would often entail, and that there would be danger of the requirement of publication operating to lower the actual standard of theses. They therefore regretfully abandoned, for the time being, the attempt to frame a rule requiring publication. But both that Board and the Faculty will doubtless welcome any satisfactory proof that the objections they have thus far found to the proposed requirement are unreal or have been exaggerated.

The third resolution refers to another subject which has long engaged the attention of the Administrative Board of the Graduate School and of the Faculty of Arts and Sciences. I think it probable that the change in the rules which is desired by the Convention is now in the way of being accomplished at this University. At a meeting of the Administrative Board of the Graduate School, held 13 April 1891, it was voted : —

"That in the opinion of this Board it is desirable to so modify the requirements for the degrees of Ph.D. and S.D. as to allow the Faculty of Arts and Sciences to accept, at its discretion, one year of study for the degree of Ph.D. or S.D. in the Graduate Department of another University as equivalent to one of the two years of residence for the degree of Ph.D. or S.D. at this University."

The Faculty of Arts and Sciences concurred in this opinion of the Board. It does not clearly appear that any further steps were taken, at that time, to bring about the proposed change; but the subject was formally brought to the notice of the Corporation, 7 March 1893.

The change suggested can be affected only by an amendment or the repeal of certain Standing Votes relating to the degrees of A.M.,

Ph.D., and S.D., which were adopted by the Corporation, 18 December 1871, the Overseers concurring 10 January 1872, and which have now become unsuited to our conditions in several particulars. Since the organization of the Graduate School in its present form, I have done what I could to secure a revision of these votes. In my report for the academic year 1890-91 (*Annual Reports*, 1890-91, p. 96), I called attention to the vote of the Administrative Board above cited. The following year (*Annual Reports*, 1891-92, pp. 105-107), I urged the importance of a general revision of the Standing Votes; maintaining, at some length, "that the dignity and value of the degrees of Ph.D. and S.D. would be enhanced by the complete abolition of all time restrictions affecting them, with the exception of that general one of *one year's residence*, which is imposed by the Statutes;" and that a change seemed especially called for "in the case of students who have pursued graduate studies at another university, either in this country or in Europe." A further allusion to the same subject was made in my next following report (*Annual Reports*, 1892-93, p. 126). The subject is, therefore, one which has been kept before the notice of persons interested in the development of our Graduate School. The Faculty have recently renewed their recommendation on the matter; and I hope that the change, so greatly desired by friends of the School, will be accomplished; and that the whole administration of the degrees of Doctor of Philosophy and Doctor of Science, under the general conditions imposed by the Statutes, will be placed in the hands of the Faculty of Arts and Sciences.

The fourth resolution is of interest to this University, in so far as it proposes the abolition of the honorary degree of Master of Arts. The Faculty of Arts and Sciences strongly sympathize with the condemnation of the practice existing at some universities of conferring the degrees of Doctor of Philosophy and Doctor of Science *honoris causa*. These degrees are new to American universities; and their sole significance is as attestations of learning, duly awarded after full investigation by competent authorities. An earnest protest should be made by all who are interested in the development of higher study against every tendency to lower or vulgarize their meaning. But the degree of Master of Arts stands on a different footing. It is an old degree, and has been given *honoris causa* at this University for nearly two hundred years. As one of our honorary degrees, it still fulfils a useful and worthy function. The value which belongs to the *ordinary* degree of Master of Arts of Harvard University, given to students in the Graduate School on examina-

tion, is incontestable. It is a dignified distinction, bestowed for serious scholarly work; though not a distinction of the same kind, or intended to be of the same kind, as the degrees of Doctor of Philosophy or Doctor of Science. It does not appear to me that the standing of this degree is in any measure discredited by its conservative and self-respecting use by this and other universities for the purpose of bestowing a highly-prized compliment on a man of intellectual and moral eminence. At the same time, I hasten to add that all the governing and deliberative boards of this University would undoubtedly unite to abolish any practice seen to be injurious to the interests of scholarship; and it may be that those interests demand the sacrifice which is here asked for.

The most interesting point of all, however, connected with the Convention of Graduate Students, lies in the mere fact of such a meeting having been held, with the serious purpose of contributing something to the discussion of questions connected with graduate study. Such an undertaking cannot but add materially to the strength of the movement of which the growth of our Graduate School forms a part; and all the universities which are endeavoring to promote the cause of graduate study must be grateful for the help and inspiration hence derived.

Conclusion.

In closing the last report I shall have the honor of presenting on the state of the Graduate School, I cannot refrain from expressing my regret at relinquishing an office which seems to me to offer to a scholar, a man of science, or a promoter of the higher education in our country, the most interesting, the most agreeable, and in many ways the most desirable and satisfactory field of work and study in the administrative service of this University. I account it a high privilege that I have held the position of executive officer of our Graduate Department since it was first established, in January 1872. I have seen it struggle for years against the coldness and scepticism of many members of our own Faculty, and against untoward conditions in its constitution and in outward circumstances; and I now have the happiness of beholding it the acknowledged representative of the best culture, the most advanced science, and the highest liberal learning of the University. I am fully conscious that I can claim nothing for myself in this progress, beyond a faithful service, and an earnest endeavor to rivet attention to the highest ideals of intellectual work as furnishing the only true basis of the development of such a school. The Graduate School is a genuine out-

growth of the demands of the generation of students now coming forward in America; and it is destined within a few years, as I confidently believe, to an expansion which will make its present prosperity look small. To this University, it is already rapidly becoming the much needed regenerator of the motives and principles of student life; the open door which is admitting to us a national constituency; the western window, letting in a flood of warmth and light to dissolve academic selfishness and narrowness, and to quicken us in the discharge of our highest duty, that of devotion to the service of our country and our time. When its own relations to the College proper have been satisfactorily established, through a wise readjustment of the grounds of the several degrees, it will gather together into one bright focus the influence and authority of the scholarship of this University, and will carry on the name of Harvard to be still a conspicuous symbol of light and power to the coming century, as it has been to that which is nearing its close.

To participate in this happy development, and to bring to bear upon it the fresh influences sure to flow from a mind newly applied to the problems it presents, form the task which, with confidence and congratulation, I commit to my successor.

JAMES MILLS PEIRCE,

Dean during the academic year 1894-95.

DECEMBER 1895.

THE DIVINITY SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :

As Dean of the Divinity School, I beg to present the following report for the academic year 1894-95 :—

The number of students registered in the School was 52. This is the largest number that has as yet been reached. Two, however, had leave of absence for the year. Some others came late, and some left early. There were 44 students present at the close of the year, of whom all but one had been present from the beginning. It may be added that no student receives help from the beneficiary fund of the School who is not present during the entire year.

The students registered were distributed as follows :—

Resident Graduates	13	Junior Class	14
Senior Class	6	Special	5
Middle Class	14		

All of these were graduates of some college or professional school or both, except two Special Students who were admitted on examination.

The Faculty last year made a slight but important change in the announced requirements for admission. It had been stated in the catalogue and circulars that all students of good character who had received the degree of A.B. might be admitted without examination. It was decided last year to add to this the qualification that the A.B., on the strength of which candidates might be thus admitted, should represent a course of study approved by the Faculty.

Theological Seminaries were represented as follows :—

Andover	2	Meadville	5
Bangor	2	Oberlin	1
Boston	1	Rochester	1
Hamilton	1		

Colleges were represented as follows :—

Bates	1	State University of Iowa . .	1
Bethany	1	University of Kansas	1
Bowdoin	2	McGill University	1
Brown	3	University of Minnesota . .	2
Central	1	University of New Brunswick	1
Cornell	1	Ohio Normal	1
Dartmouth	1	State University of Ohio . .	1
Elon	2	Ohio Wesleyan	2
Eureka	2	Williams	1
Harvard	14		

The geographical representation was as follows :—

Canada	1	Minnesota	1
Colorado	1	New Hampshire	2
District of Columbia	1	New Jersey	1
Illinois	2	New York	3
Indiana	1	North Carolina	1
Iowa	1	North Dakota	1
Maine	2	Ohio	5
Maryland	1	Pennsylvania	1
Massachusetts	22	Tennessee	1
Missouri	2	Virginia	2

In no previous year has the undenominational character of the School been so marked. Up to this time Unitarian students have always been in the majority. Last year they were simply in a plurality. This fact appears to me to mark an epoch in the history of the School, and indicates the work which may be expected to open more and more widely before it.

During the last fifteen years sixty-eight students have graduated from the School. Of these, sixty-four are now living. Their present positions are as follows :—

Having parishes	55	Withdrawn from the profession	1
Professor in a Theological School	1	Never entered	3
Candidates for settlement	2	Present position unknown	2

Of the two candidates for settlement it should be said, that one graduated last summer, and has somewhat delayed entering upon his profession, as I understand, for personal reasons. The other has very recently resigned a pulpit which he has filled for some years. I think that in neither case the position of candidacy will continue long. The two in regard to whom no information can, at the moment, be gained, have returned to their native country, Japan, where I suppose they are teaching, and, perhaps, occasionally preaching, as they planned.

During the last three years thirty-four students have been connected with the School as Resident Graduates. Thirty-two, including all of those representing denominations known as Orthodox, are now established in their profession. One is connected with a benevolent institution; and one is teaching, never having offered himself as a candidate for settlement.* The settled ministers are distributed as follows :—

Trinitarian Congregational	12	Episcopal	2
Unitarian	10	Presbyterian	2
Methodist	5	Baptist	1

* He is one of the two graduates of the School who were reported above as not having entered the ministry.

These figures are very suggestive. They show that residence at the School has not delayed the settlement of candidates for the ministry in any of the denominations represented. So far as the relation of the School to other departments of the University is concerned, they show that the graduate students enrolled in it were where they properly belonged; that is, that they were actually preparing for the ministry. So far as certain outside criticisms are concerned, they show that the School does not educate merely theologians and philosophers as such, but that it has been very successful in the training of working ministers.

While the proportional diminution of the number of Unitarian students is not to be regretted, the actual diminution of this number is a matter of regret. This is something that depends on influences outside the School. The gratifying fact that every year some students who have graduated at Meadville come to Cambridge for a year of additional study, shows the estimation in which the School is held as a training place for Unitarian ministers.

The School now offers to the Unitarian student certain advantages greater than it ever offered before. A few years ago a Unitarian Club was formed among the students. This last year some of the younger of the neighboring Unitarian ministers joined this club, and invited it to their vestries. This offered a good opportunity for mutual acquaintance, and could not but be of much help to the students. The thanks of the School are due to the ministers who have benefited the students in this way; though it is to be hoped that the service carried with it, in some degree, its own reward.

While the Unitarian Club exists for Unitarian students only, a larger association was formed last year, of which all students may be members. The object of this is to promote acquaintance and good fellowship; and it has been very helpful to this end. One result of its meetings has been that the students have made arrangements by which Alumni of the School passing the day at Cambridge may be entertained by the students either at Memorial Hall or at the Foxcroft Club. These are matters which, perhaps, might not be referred to in an official report, in the case of a school in which men are prepared for a profession other than the ministry; but in a Theological Seminary the cultivation of the spirit is no less important than that of the intellect; and it is especially interesting to find the sense of a common life growing stronger, as the elements that enter into the School become more various.

The transference of the daily chapel service of the Divinity School from the morning to the evening gives students the opportunity of

attending the inspiring morning service at Appleton Chapel without neglecting the quieter, but perhaps not less helpful, service of the School.

In the absence of Professor Toy the School did what it has done several times before, and drew upon the neighboring institution at Andover. Professor George Foot Moore, D.D., came from Andover twice a week to give instruction in the Semitic Department. His exercises were found, as was expected, both interesting and helpful.

Twenty-eight elections of College studies were made by Divinity students. Twenty of these were in the department of Philosophy. The others were very scattering, those in Economics being the largest number in any one subject. These elections represent rather wishes than accomplishment on the part of the students. Seven examinations only were taken by Divinity students in College studies, and in thirteen other cases only is attendance reported. Perhaps if the College instructors always required of professional students the paper from the Dean of the School to which they belong, which the rules of the University make obligatory, the report of attendance might be larger.

One hundred elections were made by College students, and twenty-seven by students of the Graduate School, of courses that were originally intended for Divinity students only.

Tables representing the instruction given and the attendance are added to this report. The figures given represent those who passed the required examination.

COURSES OF INSTRUCTION, 1894-95.

OLD TESTAMENT.

Dr. CHESTER.—Hebrew.—Davidson's Introductory Hebrew Grammar, Explanation of parts of Genesis and of the Psalm-book. Three times a week.
1 Div., 5 Col.

Professor LYON.—Hebrew (second course).—Syntax.—Interpretation of parts of the Prophets and Poetical Books. Twice a week.
3 Div., 1 Col.

Professor LYON.—History of Israel, political and social, from Saul to the death of Herod the Great. Two or three times a week.
7 Div., 39 Col., 2 Gr.

Dr. MOORE.—History of pre-Christian Hebrew literature. 2 hours a week.
11 Div., 2 Col.

Dr. MOORE.—History of the Hebrew religion, with comparison of other Semitic religions. Two hours a week.
7 Div., 1 Gr.

Professor LYON. — Assyrian (second course). — Delitzsch's Assyrian Grammar. Delitzsch's Assyrische Lesestücke. The Cuneiform inscriptions of Western Asia (interpretation of selections). Twice a week. 1 Div., 1 Gr.

Semitic Seminary. The pre-Israelitish History of Palestine as derived from the Cuneiform tablets of El-Amarna. 1 Div., 2 Gr.

NEW TESTAMENT.

Professor THAYER. — New Testament times : — the political, social, and religious condition of the world when Christ appeared. Twice a week, first half-year. 10 Div.

Professor THAYER. — Outline lecture on theological encyclopaedia and literature; the characteristics of the New Testament Greek: the Septuagint; textual criticism; the life of Christ; study of the Gospels; essays and criticisms. Twice a week. 5 Div.

Professor THAYER. — New Testament introduction : — the origin, contents, and history of the New Testament writings, together with the formation of the Canon. Twice a week, second half-year. 9 Div.

Professor THAYER. — Biblical interpretation : — its history, its methods, its principles and their application (to New Testament passages of historical, prophetic, ethical, and doctrinal import). Once a week. 4 Div.

Professor LYON. — Classical Aramaic (Syriac). Roediger's Chrestomathia Syriaca, ed 3. The Peshitto version of the New Testament. Once a week. 2 Div., 1 Gr.

Professor THAYER. — Reading of the Epistle to the Hebrews (voluntary). 4 Div.

Professor THAYER. — New Testament Seminary. 9 Div.

CHURCH HISTORY.

Professor EMERTON. — The Era of the Reformation in Europe from the rise of Italian Humanism to the close of the Council of Trent, 1350-1563. Twice a week. 15 Div., 42 Col., 9 Gr.

Professor EMERTON. — History of Christian doctrines. Twice a week. 6 Div.

Professor EMERTON. — Advanced study and research in connection with the Seminary in Mediaeval History. Special topic: Relations of Church and State. 2 Div.

COMPARATIVE RELIGION.

Professor EVERETT. — Studies in the comparative history of religions, particularly the Vedic religion, the Hindu philosophies, Buddhism, Mazdaism, and the Chinese religions. Twice a week. 24 Div., 7 Col., 6 Gr

ETHICS.

Professor PEABODY. — The Ethics of the Social questions. The questions of charity, divorce, the Indians, temperance, and the various aspects of the labor question (socialism, communism, arbitration, coöperation, etc.), as problems of practical Ethics. Lectures, essays, and practical observations. Twice or three times a week. 20 Div., 63 Col., Gr 1.

THEOLOGY.

Professor PEABODY.—The philosophy of religion.—An introduction to the study of Theology. Once a week. 13 Div., 4 Col., Gr. 1.

Professor EVERETT.—Systematic Theology begun: The psychological basis of religious faith. Once a week. 26 Div., 5 Col., 3 Gr.

Professor EVERETT.—Systematic Theology continued: The content of Christian faith. An elaborate essay on some theological subject is expected from each student taking this course. Three times a week. 16 Div.

Professor EVERETT.—Advanced work in Theology. 1 Div.

HOMILETICS AND PASTORAL CARE.

Mr. HALE.—The structure and analysis of sermons. Private criticism and general exercise. 9 Div.

Professor PEABODY.—Each student writes six sermons during the year, three of which are preached before the two upper classes and criticised by students and instructor; the rest are criticised privately, and are preached at a weekly religious exercise of the school which is open to the public. 15 Div.

Professor PEABODY.—The Minister as Preacher, and the history of Christian preaching. Once a week. 15 Div., 1 Col.

ELOCUTION.

Mr. CHURCHILL met the students, individually or in small groups, for instruction in Elocution. Mr. CHURCHILL was also present at the class exercises in Homiletics 2. 28 Div.

GENERAL EXERCISES.

Preaching by students in the Chapel of the School, open to the public. Once a week.

Meetings for religious conference, conducted by students. Once in two weeks.

Evening Prayers, conducted by professors and students.

One of the most interesting facts in relation to the Library was the greatly increased use that was made of it during the past year. The number of volumes borrowed from the stack was fifty per cent. greater than in the previous year. During the last three years the number of volumes borrowed from the stack has more than doubled, being one hundred and twenty-two per cent. greater in 1894-95 than in 1891-92, though in that year it was larger than ever before.

In my last report I referred to the fact that the increase in the use of the Library interrupts the work of cataloguing. There is, as yet, not enough demand for books to justify the employment of a boy to get them as they are needed, and one of the persons engaged upon the catalogue must be called off for this purpose.. This is obviously a waste of skilled labor, but no remedy for it has thus far been discovered.

During the year from October 1, 1894, to September 1, 1895, 324 volumes and two pamphlets were added to the Library by purchase, and 230 volumes and 296 pamphlets by gift. There were sold as duplicates 132 volumes and two pamphlets.

The last year 2701 titles were placed in the catalogue of authors, and 496 in that of subjects. As in the preceding year, no work was done during the summer.

From October 1, 1894, to September 30, 1895, there were borrowed from the stack for home use 1716 volumes; for use in the reference room 608 volumes, and from the reserved books for overnight use 739 volumes.

The Library had during the year the benefit of a gift of \$1300 from that constant benefactor of the School, the Society for Promoting Theological Education. Of this sum, \$547.99 were spent for books, and the balance for the services of the assistants in the work of the catalogue.

The Rushton Dashwood Burr Fund, which is the only fund for the exclusive use of the Library, has been trebled by the bequest of \$2000 from the estate of Mrs. Burr.

C. C. EVERETT, *Dean*.

THE LAW SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, —I have the honor of presenting my report upon the Law School for the academic year 1894-95.

At the close of the year, Professor Langdell resigned the office of Dean, which he had filled since 1870 with great honor to himself and the School. His associates in the Law Faculty, together with Mr. Justice Holmes, a former colleague, wishing to commemorate the twenty-fifth year of his coming to the School, published in the May number of the Harvard Law Review, which the editors most willingly surrendered for the purpose, a collection of legal essays, with this dedication: "To C. C. Langdell, in honor of his genius as a lawyer, his originality as a teacher of law, his sagacity as a law-school administrator, and his devoted and successful services as dean and professor during the last twenty-five years."

The quarter-centennial of Professor Langdell's holding of the deanship was also fittingly celebrated by the Harvard Law School Association at its festival in Commencement week. Sir Frederick Pollock came from England to deliver the address in Sander's Theatre, and the former members of the School returned to Cambridge in greater numbers than ever before.

The table on pp. 142, 143 gives the courses of study and instruction during the year, the text-books used, the number of exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

The Quinquennial Catalogue of the School was issued on the day of the Law School celebration. By arrangement with the Harvard Law School Association, the new catalogue contains not only the usual chronological and alphabetical lists, but also a geographical list giving the present address of all living past members of the School. The names of those who are also members of the Association are distinguished by a different type, and the Association will no longer issue a catalogue of its own. The School was fortunate in being able to put the preparation of the new catalogue into the hands of Mr. Arnold, the librarian, who has proved his eminent fitness for such work on previous occasions. I can say of the catalogue of 1894, what my predecessor said of the catalogue of 1890, that "in completeness and accuracy it may challenge comparison with any similar work ever published."

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
First Year.			
Prof. Williston	Contracts. Cases on Contracts: Langdell, vol. 1, 2d ed., Williston, vol. 1 . . .	3	167
Prof. Gray	Property. Gray's Cases on Property, vol. 1, 2	2	170
Prof. Smith	Torts. Cases on Torts: Ames, vol. 1, 2d ed., Smith, vol. 2	2	170
Prof. Williston	Civil Procedure at Common Law. Ames's Cases on Pleading	1	180
Prof. Beale	Criminal Law and Procedure. Beales Cases on Criminal Law	2	165
Second Year.			
Prof. Wambaugh	Agency. No text-book	2	38
Prof. Williston	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes . .	2	59
Prof. Beale	Carriers. McClain's Cases on Carriers	2	41
Prof. Thayer	Evidence. Thayer's Cases on Evidence	2	119
Prof. Wambaugh	Insurance. No text-book	2	6
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading . .	2	23
Prof. Smith	Law of Persons. Interpretation of Statutes. No text-book	2	24
Prof. Gray	Property. Gray's Cases on Property, vol. 3, 4	2	121
Prof. Ames	Quasi-Contracts and Constructive Trusts. Keener's Cases on Quasi-Contracts .	2	41
Prof. Thayer	Sales of Personal Property. Williston's Cases on Sales	2	87
Prof. Ames	Trusts. Ames's Cases on Trusts (new edition)	2	117
Prof. Wambaugh	Contracts. No text-book	1	6
Prof. Beale	Damages. No text-book	1	6

Third Year.

Prof. Thayer	Constitutional Law. Thayer's Cases on Constitutional Law	2	42
Prof. Smith	Corporations. Cumming's Cases on Corporations	2	96
Prof. Langdell	Jurisdiction and Procedure in Equity. No text-book	2	40
Prof. Ames	Partnership. Ames's Cases on Partnership	2	30
Prof. Gray	Property. Gray's Cases on Property, vol. 5, 6	2	22
Prof. Langdell	Suretyship and Mortgage. No text-book	2	4
Prof. Wambaugh	Agency. No text-book	2	31
Prof. Williston	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	42
Prof. Beale	Carriers. McClain's Cases on Carriers	2	25
Prof. Thayer	Evidence. Thayer's Cases on Evidence	2	6
Prof. Wambaugh	Insurance. No text-book	2	2
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading	2	8
Prof. Smith	Law of Persons. Interpretation of Statutes. No text-book	2	44
Prof. Gray	Property II. Gray's Cases on Property, vol. 3, 4	2	6
Prof. Ames	Quasi-Contracts and Constructive Trusts. Keener's Cases on Quasi-Contracts	2	14
Prof. Thayer	Sales of Personal Property. Williston's Cases on Sales	2	29
Prof. Ames	Trusts. Ames's Cases on Trusts (new edition)	2	5
Prof. Beale	Conflict of Laws. No text-book	1	4
Prof. Wambaugh	Contracts. No text-book	1	5
Prof. Beale	Damages. No text-book	1	3
Prof. Ames and Prof. Beale	Legal History. No text-book	1	

By the addition of 1684 volumes and 305 pamphlets during the year, the library contained, September 1, 1895, 35,615 volumes and 4222 pamphlets. Some progress was made in 1894-95 in duplicating the sets of State Reports. The library has now two sets of the reports of thirteen States, and three sets of the English reports, of the reports of the Supreme Court of the United States, and of seven of the States. It is hoped that within a year or two the duplication of the State reports will be completed.

The following table exhibits the number of students in the School and in the different classes in each of the last two years : —

Year.	First Year Class.	Second Year Class.	Third Year Class.	Special Students.	Total No. of Students.	No. present during whole of Year.	No. present during only part of Year.	Average Number.
1893-94 .	149	123	72	23	367	329	38	349
1894-95 .	176	140	84	13	413	385	28	400

The following table exhibits the number and character of the new entries in 1894-95 and in the current year prior to December 1st : —

Year.	Entries of all kinds.	Graduates of Colleges.	Harvard Graduates.	Graduates of other Colleges.	Non-Graduates.
1894-95	227	154	65	89	73
1895-96	240	186	76	110	54

The following table exhibits the results of the examinations for a degree in each of the last two years : —

Year.	First Year.			Second Year.			Third Year.			
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Received Honor Degree.	Failed.
1893-94 . . .	165	151	14	110	108	2	86	80	22	6
1894-95 . . .	163	149	14	128	114	14	98	96	15	2

After the current year, only graduates of colleges of good standing and persons qualified to enter the Senior class of Harvard College will be admitted to the school as candidates for a degree. When the Faculty vote in favor of this prospective policy of restriction was adopted in 1893, it was believed that in the first year of its operation the number of students would fall below 300. But the School

has grown so rapidly in the last two years, and particularly in the number of graduates from colleges other than Harvard, that it is highly probable that there will be not far from 400 students in the school in 1896-97.

The following table exhibits the growth of the School, during the last twenty-six years, in the number of students, the number and percentage of college graduates, and in the number of colleges represented by their graduates.

Year.	Whole No. of Students.	Total of College Graduates.	Harvard Graduates.	Graduates of other Colleges.	Non-Graduates.	Per cent. of College Graduates.	No. of Colleges represented.
1870-71	165	77	27	50	88	47	27
1871-72	138	70	34	36	68	51	25
1872-73	117	66	34	32	51	56	25
1873-74	141	86	49	37	55	61	25
1874-75	144	82	63	19	62	57	18
1875-76	173	93	60	33	80	54	25
1876-77	199	116	74	42	83	58	30
1877-78	196	121	80	41	75	62	30
1878-79	169	109	71	38	60	64	24
1879-80	177	118	90	28	59	66	20
1880-81	161	112	82	30	49	70	19
1881-82	161	99	66	33	62	61	22
1882-83	138	93	58	35	45	67	32
1883-84	150	105	75	30	45	70	25
1884-85	156	122	85	37	34	78	31
1885-86	158	122	83	39	36	77	29
1886-87	188	143	88	55	45	76	34
1887-88	225	158	102	56	67	70	32
1888-89	225	158	105	53	67	70	32
1889-90	262	189	122	67	73	72	41
1890-91	285	200	135	65	85	70	33
1891-92	370	257	140	117	113	69	48
1892-93	405	266	132	134	139	66	54
1893-94	367	279	129	150	88	76	56
1894-95	413	310	139	171	103	75	74
1895-96	466	375	173	202	91	80	75

Eighteen Harvard College Seniors having anticipated nearly all the work of their senior year, are on leave of absence from the College, and are registered in the Law School. If they are reckoned with the Harvard graduates, the percentage of college graduates in the School is 84. It is interesting to observe that the number of colleges represented in the School in 1890-91 was 33, only six greater than the number in 1870-71, while in 1895-96, the number is 75, a gain in

	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.
Harvard	27	34	34	49	63	59	72	79	68	88	82	65	59	74	87	82	86	102	102	123	137	140	132	129	139	173
Amherst	4	..	..	1	..	1	3	2	4	4	4	..	1	1	2	2	5	5	5	9	5	5	9	14	16	15
Bowdoin	2	..	1	..	..	3	1	1	3	3	1	1	..	2	1	..	1	2	1	1	..	8	8	6	2	3
Brown	2	7	7	4	..	2	3	2	2	1	3	2	2	..	2	1	3	5	5	6	7	13	14	13	11	19
California	1	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	2	4	4	7	7
Dartmouth	6	..	..	3	1	1	1	1	3	1	1	3	1	2	..	..	2	..	..	2	3	2	5	5	8	7
Michigan . . . . .	..	..	1	1	..	..	1	1	1	3	1	1	1	3	3	1	6	5	2	2	2	2	4	9	2	3
Oberlin . . . . .	..	..	..	..	..	..	..	1	2	3	1	..	1	..	1	4	6	5	5	2	2	2	4	9	2	2
Princeton	2	3	1	..	..	2	3	2	2	..	..	..	..	..	..	1	1	1	1	1	3	4	5	5	6	7
Trinity . . . . .	..	1	..	..	..	..	..	..	..	..	1	2	1	3	1	..	1	1	..	2	3	2	2	2	3	4
Williams	3	2	..	4	1	..	1	4	..	..	..	2	..	..	..	1	1	1	..	1	5	8	7	6	7	11
Yale	5	2	2	4	3	3	2	2	4	1	4	8	2	2	3	7	8	8	8	3	8	7	22	19	20	32

five years of 42. It is also noteworthy that the Harvard graduates were outnumbered by the graduates of other colleges in 1870-71 and 1871-72, that the reverse was true of each of the twenty years following, but that in each of the last four years the graduates of other colleges again exceed the Harvard graduates.

The table on p. 146 exhibits the representation in the School since 1870-71, of the twelve colleges which have been its principal contributors.

JAMES BARR AMES, *Dean*.

THE MEDICAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR, — As Dean of the Medical Faculty I have the honor to submit the following report upon the Medical School for the academic year 1894-95 : —

The change from the three-years' course to the four-years' course of instruction may now be considered as established. A few students still remain in the School who can receive, if they so desire, the degree of a three-years' course. The number of these, however, is very small, and is composed of those who, for some reason, have been obliged to discontinue their studies for one or more years, or of those whose scholarship has been so poor that they have thus far been unable to fulfil the requirements, and whose prospects in the future are diminishing as the requirements of the examinations are increasing.

The annual reception given by the Faculty to the Instructors of the School, the Committee to Visit the School, the Officers of the Alumni Association, the Superintendents of the Hospitals at which clinical instruction is given, and the medical members of the governing bodies of the University was held Friday evening, November 9, and was fully attended.

Building. — In addition to the ordinary repairs, the Building Committee found it necessary to renew the entire ceiling in the upper story. Owing to defective construction, it was found that the supports of the heavy fire-proof slabs, to which the plaster was attached, had become loosened to such an extent that they were liable to fall, in which case serious injury or loss of life might ensue. New supports were therefore put in, and the plaster renewed in all of the anatomical and histological rooms and in the hall in the fourth story.

In order to accommodate the increased number of students it has been found necessary to divide each desk and locker in the chemical laboratory into two, so that each student will have only one half the amount of desk room which he formerly had. This change is much to be deprecated.

Four new tables have been placed in the dissecting room, and more settees in Lecture Rooms B and E.

Chemical Department. — The general character of the instruction has been the same as during the past few years, except that the clinical examination of blood was added to the instruction of the

second year. Owing to the large size of the first and second classes, the laboratory accommodations were found insufficient, more than three hundred students being taught during the second half year in rooms planned to accommodate only two hundred and ten. Additional room is also much needed for the assistants, and a separate room for graduate students and those pursuing special investigations.

Physiological Department.—Asst. Prof. W. T. Porter has continued his study of the respiratory tract in the cervical cord and has published his results in the following papers:—

1. Ueber die Hemmungshypothese in der Athmungsphysiologie. *Centralblatt für Physiologie*, 1894.
2. The Path of the Respiratory Impulse from the Bulb to the Phrenic Nuclei. *Journal of Physiology*, 1895.

He has investigated the effect of closure on the coronary arteries, and has published the following paper on the subject:—

Verschluss der Coronararterien ohne mechanische Verletzung. *Centralblatt für Physiologie*, 1895.

He has also studied, by an entirely new method, the plateau of the intraventricular pressure curve. Under his direction the following special studies have been made by medical students:—

1. By Mr. J. H. PRATT, on the Filling of the Auricle.
2. By Mr. A. A. BEEBE, on the Coördination of the Respiratory Discharge from the Facial and Phrenic Nuclei.
3. By Mr. R. T. ATKINSON, on the Isolation of the Mammalian Heart.

Prof. Porter has also delivered during the winter two advanced special courses of lectures:—

1. Chapters in the Innervation of Respiration.
2. The Cerebral Doctrines of F. Goltz.

The attendance upon these lectures has varied from eight to sixteen, and has included physicians and medical students of all classes.

Dr. Franz Pfaff has carried on a research on the active principle of *Rhus toxicodendron* and *Rhus venenata*. He has for the first time isolated the volatile acid from *Rhus toxicodendron* which, under the name of toxicodendric acid, has been held till now to be the active principle causing the well-known skin eruption. The chemically pure Sodium and Barium salts of this volatile acid have been obtained, and the quantitative and qualitative analyses have shown this acid to be merely acetic acid. As the real active principle, Dr. Pfaff has obtained from *Rhus toxicodendron* and *Rhus venenata* a non-volatile oil which produces the characteristic effects of the poison. The quantitative analysis of this oil has not yet been made,

owing to the circumstance that it so readily oxidizes and no stable compound of it has been obtainable. The investigation is being continued.

Together with Mr. H. Cabot, Dr. Pfaff has studied the effect of salicylic acid in toxic doses on mammaliae. They find that the acid has a marked action only on the respiration, the circulation being almost unaffected. The details of this investigation were given by Mr. Cabot in a paper read at a physiological conference.

Embryological Department. — Considerable progress has been made toward supplying apparatus and specimens for the more thorough and systematic instruction of the large classes in Histology and Embryology. The formation of a large collection of embryological and histological specimens has been planned, and considerable material for this collection has been gathered.

Professor Minot has been engaged in investigations on the olfactory lobe, and has also published the following articles:—

Gegen das Gonotom. *Anat. Anz.*, IX, 210–213, 1894.

Lehrbuch der Entwicklungsgeschichte des Menschen.

Deutsche Ausgabe mit Zusätzen des Verfassers von Dr. Med. Sándor Kaestner. 8vo, pp. xxxvi, 844, Leipzig, 1894.

If Microscopes were more Powerful. *The Youth's Companion*, No. 3534, LXIX Year, p. 78, 1895.

The Fundamental Difference between Plants and Animals. *Science* I, No. 12, 311–312, 1895.

The Work of the Naturalists in the World. *Popular Science Monthly*, XLVII, 60–72, 1895.

Ueber die Vererbung und Verjüngung. *Biolog.-Centralbl.*, XV, 571–587, 1895.

Bacteriological Department. — The condition of the Bacteriological Laboratory during the last year has been extremely satisfactory, and, with the exception of the need for more room, is likely to continue to be so. From early in the Fall of 1894 until the close of the school year, every place available for graduate instruction was taken, and it was necessary to turn away a number of applicants.

The laboratory, through its head, has had charge now for nearly a year of the production of the Antitoxine of Diphtheria for the Board of Health of the City of Boston; and, since June last, has been in a position to furnish free a supply, gradually growing more ample, for persons sick of diphtheria, and resident in the city limits. The head of the laboratory has also had charge of the cultural diagnoses in cases of suspected diphtheria for the same Board of Health, and for the Boards of Health of some fourteen other communities as well.

The amount of work of this kind accomplished can be best understood by the statement that about eight thousand examinations of cultures have been made since the first of last November. Besides making the laboratory better known, it has been possible, because of this compensated work, to apply several thousand dollars to its equipment and running expenses.

Of investigation, there has been carried on less than usual, because of the demands of the instruction upon the staff of the laboratory. Dr. A. K. Stone has done some work in the study of the anaërobic bacteria. Dr. E. A. Darling has begun an investigation on the bacteria of cow-pox, in continuance of the work of the late Dr. Stephen A. Martin. Dr. H. D. Chadwick has completed a very good thesis upon the *Gonococcus*. Dr. S. A. Hopkins has begun a series of investigations upon the bacteria of the mouth.

The number of graduate and special students has been sufficient to crowd the laboratory to its fullest capacity and to force the denial of several requests for places.

Museum.—The year's addition to the collection has been quite large in the departments of pathology and anatomy; and to the series of large models made under Prof. Dwight's direction have been added one of the foot and one of the hand. The special collections to illustrate the ear and orthopedic surgery have already begun to assume considerable size. The crowded condition of the shelves is as serious as ever, and the problem of accommodating the annual increase will in the future be a difficult one to solve if all of the older specimens are to be kept as well. Many students have visited the collection to study the specimens during the hours the museum is open.

Pathological Department.—The pathological laboratory has accommodations for 15 special students. There have been 24 special students working in the laboratory during the past year, some constantly and others for various periods. At times applicants have been refused, owing to the want of room. In addition to the special students, 19 men have availed themselves of the special courses of instruction offered by the pathological department.

The following publications have appeared, or have been accepted for publication, from the department during the past year:—

Prof. W. T. COUNCILMAN.—Surgical Pathology including Inflammation and the Repair of Wounds.

Dr. F. B. MALLORY.—1. A case of Actinomycosis. In this work certain peculiarities of the structure and growth of the fungus were described for the first time.—2. On certain peculiarities of staining of the neuralgia fibres.

Dr. J. H. WRIGHT. — A Report on the Bacteriological Investigations of Autopsies. In this paper was given an analysis of the results of cultures made at autopsies at the City Hospital for the last two years.

Drs. WRIGHT and MALLORY. — Ueber einen pathogenen Kapsel bacillus bei Bronchopneumonie.

Dr. W. H. PRESCOTT. — Analysis of Seven Cases of Primary Carcinoma of the Liver.

Dr. E. W. TAYLOR. — Two Cases of Syphilis of the Central Nervous System.

Dr. J. L. MORSE. — Leucocytosis in Diphtheria. The first Lyman prize was awarded to this work.

Dr. A. H. WENTWORTH. — Two Cases of Infection of the Lungs Proceeding from the Pleura. Two Cases of Primary Malignant Growth of the Kidneys in Infants.

Numerous investigations are now being carried on, the results of which will shortly be published.

Gynaecology. — On the resignation of Dr. W. H. Baker as Professor of Gynaecology, the Gynaecological Department was placed for the present under the direction of the Professor of Obstetrics.

During the year the following courses of free evening lectures were given to medical graduates : —

Oct. 11, 18. — Surgeon-Major J. V. HOFF. — *A Glance at the History of Military Sanitation.* — *Notes on the Duties of a Military Medical Officer in Peace and War.*

Oct. 25. — Dr. A. WORCESTER. — *Trained Nurses.*

Nov. 1, 8. — Dr. S. J. MIXTER. — *Modern Surgery in Private Practice.* — *Surgery of the Intestine.*

Nov. 15. — Professor D. W. CHEEVER, LL.D. — *Medical Ethics.*

Nov. 22, 29. — Professor W. T. COUNCILMAN. — *Bright's Disease.*

Dec. 6, 13. — Professor T. DWIGHT, LL.D. — *Applied Anatomy of the Head and Neck in Adults and Children.*

Dec. 20, 27. — Dr. J. H. MCCOLLOM. — *Diseases Dangerous to the Public Health.*

Jan. 3, 10. — Professor J. C. WHITE. — *The Cutaneous Features of Tuberculosis, Syphilis, and Leprosy.*

Jan. 17, 24. — Professor H. C. ERNST. — *Tuberculosis.* — *Immunity.*

Jan. 31. — Dr. E. COWLES. — *The Relation of Insanity to Neurasthenia.*

Feb. 7. — Dr. F. H. DAVENPORT. — *The Disorders of Menstruation.*

Feb. 14, 21. — Asst. Professor M. H. RICHARDSON. — *The Operative Surgery and Prognosis of Mammary Cancer. — A Consideration of Intestinal Obstructions, Acute and Chronic, with Technique of Resections.*

Feb. 28. — Dr. T. W. FISHER. — *Psychiatry, Old and New, in New England.*

Mar. 7, 14. — Asst. Professor W. T. PORTER. — *The Physiology of the Cortex of the Brain.*

Scholarships. — The Charles Pratt Strong Scholarship was awarded this year for the first time. There was no award made of the Lewis and Harriet Hayden Scholarship which had been established for colored students, as there was no applicant of sufficient merit. The Alfred Hosmer Linder Scholarship has been established, with an income at present of two hundred dollars.

The Scholarships and Fellowships were awarded as follows : —

1st Barringer Scholarship, H. A. Webber,	3d Class.
2d " " A. W. Marsh,	4th "
Faculty " M. J. Landers,	3d "
" " H. A. Anderson,	3d "
" " W. H. Barton,	2d "
" " H. T. Swain,	2d "
Cheever " L. G. Crandon,	1st "
Sweetzer " D. F. Jones,	3d "
Jones " A. T. Mann,	3d "
Doe " H. F. Willard,	3d "
Strong " A. R. Perry,	3d "
Foster Gratuity " H. D. Chadwick,	4th "
" " J. A. Mahon,	3d "

The C. E. Ware and G. C. Shattuck Fellowships of 1893-94 were awarded Dr. E. A. Darling for work on the bacteriology of vaccinia.

The G. C. Shattuck Fellowship of 1894-95 was awarded Mr. J. A. Capps of the fourth class for the study of the blood in progressive general paralysis.

The John Ware Fellowship of 1894-95 was awarded to Dr. J. B. Ogden for investigations in the causation of uraemia.

The C. E. Ware Fellowship of 1894-95 was awarded to Dr. A. K. Stone for the study of anaerobic bacteria.

The statistics of the School will be found in the following tables : —

COURSES OF INSTRUCTION, 1894-95.

FIRST YEAR.

- Anatomy. — Professor T. DWIGHT, Demonstrator DEXTER, Instructor CONANT, Asst. Demonstrator MUNRO, Assistant TENNEY, Assistant BROOKS, Assistant C. A. PORTER. 9 hours per week. 164 students examined.
- Physiology. — Professor H. P. BOWDITCH, Asst. Professor W. T. PORTER, Instructor PFAFF. $6\frac{1}{2}$ hours per week. 152 students examined.
- Histology and Embryology. — Professor MINOT, Instructor QUINCY, Assistant E. M. GREENE, Assistant AMES. $5\frac{1}{2}$ hours per week. 167 students examined.
- Medical Chemistry. — Associate Professor HILLS, Assistant WORCESTER, Assistant OGDEN. 3 hours per week. 159 students examined.
- Hygiene. — Instructor HARRINGTON. $\frac{1}{2}$ hour per week.
- Bacteriology. — Asst. Professor ERNST, Assistant STONE, Assistant BURR, Assistant MCCOLLOM, Assistant DARLING. 1 hour per week. 159 students examined.

SECOND YEAR.

- Advanced Anatomy. — Professor T. DWIGHT, Asst. Professor M. H. RICHARDSON. 4 hours per week. 95 students examined.
- Pathology and Pathological Anatomy. — Professor COUNCILMAN, Instructor MALLOY, Assistant TAYLOR, Assistant WRIGHT, Assistant PRESCOTT. 8 hours per week. 100 students examined.
- Clinical Chemistry. — Professor WOOD, Assistant OGDEN, Assistant WORCESTER. 4 hours per week. 92 students examined.
- Therapeutics. — Instructor HARRINGTON, Demonstrator CHADBOURNE, Assistant JORDAN. 2 hours per week. 99 students examined.
- Theory and Practice. — Professor FITZ, Instructor CUTLER. 2 hours per week.
- Clinical Medicine. — Professor SHATTUCK, Associate Professor MASON, Instructor GANNETT, Instructor WITHINGTON, Assistant V. Y. BOWDITCH, Assistant KNIGHT, Assistant SEARS, Instructor VICKERY. $4\frac{1}{2}$ hours per week.
- Surgery and Clinical Surgery. — Professor WARREN, Professor C. B. PORTER, Instructor CABOT, Instructor MIXTER, Assistant WATSON, Instructor HOMANS, Instructor GAY, Instructor BURRELL, Assistant MONKS, Assistant SCUDDER, Assistant LOVETT, Assistant THORNDIKE, Assistant CONANT. $8\frac{1}{2}$ hours per week.

THIRD YEAR.

- Theory and Practice of Medicine. — Professor FITZ, Instructor CUTLER. 3 hours per week. 89 students examined.
- Surgery. — Professor WARREN, Instructor CABOT, Assistant WATSON, Instructor MIXTER, Instructor GAY, Instructor HOMANS. 3 hours per week. 104 students examined.

Clinical Surgery.—Professor C. B. PORTER, Instructor BURRELL, Assistant MONKS, Assistant LOVETT, Assistant THORNDIKE, Assistant CONANT, Assistant SCUDDER. 2 hours per week. 16 students examined.

Clinical Medicine.—Professor SHATTUCK, Associate Professor MASON, Instructor GANNETT, Instructor WITHINGTON, Assistant V. Y. BOWDITCH, Instructor VICKERY, Assistant KNIGHT, Assistant SEARS. 3 hours per week. 22 students examined.

Obstetrics.—Professor W. L. RICHARDSON, Instructor C. M. GREEN, Assistant REYNOLDS, Assistant TOWNSEND, Assistant HAVEN. $3\frac{2}{3}$ hours per week. 119 students examined.

Electives.

Ophthalmology.—Professor WADSWORTH, Assistant STANDISH, Instructor CHENEY. 2 hours per week.

Otology.—Professor BLAKE, Professor J. O. GREEN, Assistant BRYANT. 1 hour per week.

Dermatology.—Professor WHITE. 2 hours per week. 61 students examined.

Diseases of the Nervous System.—Professor PUTNAM, Instructor WALTON, Instructor KNAPP. 2 hours per week. 81 students examined.

Diseases of Children.—Professor ROTCH, Instructor BUCKINGHAM, Assistant WENTWORTH, Assistant CRAIGIN. 2 hours per week. 89 students examined.

Mental Diseases.—Lecturer FISHER, Instructor COWLES. 1 hour per week. 81 students examined.

Gynaecology.—Professor BAKER, Instructor DAVENPORT, Assistant SWIFT, Instructor WASHBURN, Instructor BURRAGE. $1\frac{1}{2}$ hours per week. 64 students examined.

Legal Medicine.—Professor DRAPER. 1 hour per week.

Bacteriology.—Asst. Professor ERNST, Assistant STONE, Assistant BURR, Assistant MCCOLLOM, Assistant DARLING. 1 hour per week.

Syphilis.—Instructor POST. 1 hour per week.

FOURTH YEAR.

Ophthalmology.—Professor WADSWORTH, Assistant STANDISH, Instructor CHENEY. 3 hours per week. 22 students examined.

Dermatology.—Professor WHITE. 2 hours per week. 11 students examined.

Otology.—Professor BLAKE, Professor J. O. GREEN, Assistant BRYANT. 3 hours per week. 3 students examined.

Laryngology.—Instructor DEBLOIS, Instructor FARLOW, Instructor COOLIDGE. 2 hours per week. 8 students examined.

Gynaecology.—Professor BAKER, Instructor DAVENPORT, Assistant SWIFT, Instructor WASHBURN, Instructor BURRAGE. 2 hours per week. 16 students examined.

Diseases of Children.—Professor ROTCH, Instructor BUCKINGHAM, Assistant WENTWORTH, Assistant CRAIGIN. 1 hour per week. 2 students examined.

Diseases of the Nervous System.—Professor PUTNAM, Instructor WALTON,
Instructor KNAPP. 1 hour per week. 3 students examined.

Mental Diseases.—Lecturer FISHER, Instructor COWLES. $1\frac{1}{4}$ hours per week.

Clinical Obstetrics.—Professor W. L. RICHARDSON, Associate Professor C. M.
GREEN, Assistant REYNOLDS, Assistant TOWNSEND, Assistant HAVEN. 1
hour per week. 23 students examined.

Operative Obstetrics.—Professor W. L. RICHARDSON, Associate Professor C. M.
GREEN, Assistant REYNOLDS, Assistant TOWNSEND. $\frac{1}{2}$ hour per week.
14 students examined.

Operative Surgery.—Professor C. B. PORTER, Instructor BURRELL, Assistant
MONKS, Assistant LOVETT, Assistant THORNDIKE, Assistant CONANT, Assist-
ant SCUDDER. $\frac{1}{2}$ hour per week. 9 students examined.

Legal Medicine.—Professor DRAPER. $\frac{1}{2}$ hour per week. 8 students examined.

Hygiene.—Lecturer DURGIN. $\frac{1}{2}$ hour per week. 3 students examined.

Bacteriology.—Asst. Professor ERNST, Demonstrator JACKSON, Assistant STONE,
Assistant BURR, Assistant MCCOLLOM, Assistant DARLING. $\frac{1}{2}$ hour per
week. 26 students examined.

Syphilis.—Instructor GREENOUGH. $1\frac{1}{3}$ hours per week. 1 student examined.

Orthopaedics.—Asst. Professor BRADFORD. $\frac{2}{3}$ hour per week.

Clinical Medicine.—Instructor GANNETT, Instructor VICKERY. 1 hour per week.

Pathology.—Dr. W. F. WHITNEY. $\frac{2}{3}$ hour per week.

Surgery.—Professor WARREN, Instructor HOMANS, Instructor GAY, Instructor
CABOT, Assistant WATSON, Instructor BURRELL. 3 hours per week.

Many of the studies of the fourth year were elective.

TABLE I.—GENERAL STATISTICS OF THE SCHOOL.

EXAMINATIONS FOR ADMISSION.

		Physics.	Latin.	Eng-lish.	Elec-tive.	Gen. Chem.	Qual. Analysis.	Passed.	Re-jected.	
1894.	{ June	{ Offered . .	61	60	65	66	39	24	} 69	2
		{ Conditioned	19	8	0	7	16	8		
	{ Sept.	{ Offered . .	80	71	65	54	62	21	} 79	3
		{ Conditioned	31	11	2	1	23	1		

New matriculants . . . 178 { Graduates 6
Undergraduates . 172

Of these 35 % were College graduates.

The whole number of students in attendance :—

In courses for graduates	56
Fourth Class	33
Third Class	98
Second Class	123
First Class	182
Total	492

	3 yrs. Course.	4 yrs. Course.
Applicants for Degree	59	28
Rejected	16	7
Graduated	43	21

Of the 21 students who received the degree of Doctor of Medicine in the four years' course, 5 received the degree *cum laude*, and 7 received the degree of Master of Arts together with that of Doctor of Medicine.

The following theses were recommended for mention on the Commencement programme :—

Joseph Almarin Capps, A.B., "A Study of the Blood in General Paralysis."

Cleon Melville Hibbard, A.B., "A Study of the Excretion of Urea and Uric Acid in Mental Diseases with special Reference to Melancholia."

	SUMMER COURSES.					GRADUATE COURSES.				
	1891.	1892.	1893.	1894.	1895.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
Courses taken . .	77	84	111	101	110	145	52	103	82	95
Students	65	67	81	93	89	43	33	52	53	50
Receipts	\$1817	\$1865	\$2650	\$2355	\$2725	\$2137	\$1240	\$2083	\$2010	\$2813.33

TABLE II.—JUNE EXAMINATIONS.

		FIRST CLASS				AND		SECOND CLASS.															
		Histology.		Bacteriology.		Medical Chemistry.		Anatomy.		Physiology.		General Chemistry.		Clinical Chemistry.		Materia Medica.		Path. Anatomy.		Adv. Anatomy.		Therapeutics.	
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1891 { Passed Rejected Total	76	16	111	88	94	24	87	76	66	86	27	56	11	51	65		78	101	116	27	10	13	
	15	17	17	32	31		28	22	15	33		7	11	19	10		23	10	3	10			
1892 { Passed Rejected Total					125		115	98	81	119		63		70	75		95	119	116				
					107	21	102	79	108	14	7	12	11	3			12	11	3				
1893 { Passed Rejected Total	76	16	111	88	136		140	110	126	15		107		119	101		107	119	116	3	23	23	
	15	17	17	32	39		38	31	18	1		1	14	3			95	116	116	3	23		
1894 { Passed Rejected Total	91	28	128	120	131	26	126		133	4	0	140	17	125	125		140	125	125	9	47	37	
	80	32	96	74	80		91		23	4	0	89	17	89	78		89	89	114	13	31	28	
1895 { Passed Rejected Total	112	28	111	99	107	25	147		19	16		107		103	109		107	103	103				
	139	18	127	119	116	25	114		82			87	33	86	50		87	86	86	9	41	41	
	169	18	159	159	164		152		92			100		95	99		100	95	95				

TABLE II. — JUNE EXAMINATIONS, CONTINUED.

FOURTH CLASS.																													
		Ophthalmology.		Dermatology.		Gynaecology.		Clinical Obstetrics.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Legal Medicine.		Otolaryngology.		Laryngology.		Operative Obstetrics.		Operative Surgery.		Bacteriology.		Hygiene.	
		%		%		%		%		%		%		%		%		%		%		%		%		%		%	
1891	Passed	11		7		13		7		19		1		1		4		2		1		15		5		2		1	
	Rejected	0		0		0		1		0		0		0		0		0		0		0		0		0		0	
	Total	11		7		13		8		19		1		1		4		2		1		15		5		2		1	
1892	Passed	4		13		21		17		33						9		3		2		17		6		1		5	
	Rejected	3		0		9		0		0						0		0		0		4		2		0		0	
	Total	7		13		23		17		33						9		3		2		21		8		1		5	
1893	Passed	5		4		15		7		14		6				6		3		1		6		4		10			
	Rejected	1		0		0		1		0		0				0		0		0		0		0		0			
	Total	6		4		15		8		14		6				6		3		1		6		4		10			
1894	Passed	5		6		19		23		24		5				8		8		4		15		10		20		6	
	Rejected	0		0		3		1		0		0				0		0		0		1		1		5		0	
	Total	5		6		22		24		24		5				8		8		4		16		11		21		6	
1895	Passed	1		9		16		19		26		2				12		3		7		13		7		23		3	
	Rejected	0		2		0		4		1		1				1		0		1		1		2		3		0	
	Total	1		11		16		23		27		3				13		3		8		14		9		26		3	

Early in the year the Faculty voted to admit women to the Graduate Courses of the School at the discretion of the instructors in charge, provided the rules of the hospitals in which clinical instruction is given be observed.

WILLIAM L. RICHARDSON, *Dean*.

THE DENTAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As the Dean of the Dental Faculty I have the honor to submit the following report on the Dental School for the year ending September 25th, 1895.

At the beginning of the year thirty-eight new students entered the School, and forty-two of the old students returned to complete their work, making the total number of students in the School during the year, eighty. Of this number, seventeen received the Degree of Doctor of Dental Medicine at Commencement in June.

Instruction was given as usual throughout the year. To the first class:—in Anatomy by Professor Dwight; in Physiology by Professor Bowditch; in Histology by Professor Minot; in Chemistry by Professor Hills; in Hygiene by Dr. Harrington; and in Bacteriology by Professor Ernst.

To the second class:—in Operative Dentistry by Professor Fillebrown; in Materia Medica and Therapeutics by Assistant Professor Briggs; in Dental Pathology by Professor Brackett; in Oral Anatomy and Physiology by Dr. Stanton; in Crown and Bridge Work by Dr. Cooke; and in Orthodontia by Dr. Smith.

To the third class:—in Operative Dentistry, Orthodontia, and Crown and Bridge Work; in Surgical Pathology by Dr. Monks; and in Neurology by Dr. Walton.

Special clinical instruction of great value was also given during the year by Drs. Clapp, Potter, and Stoddard.

The Mechanical Department with Dr. Moriarty in charge continued its good work by supplying artificial substitutes in many cases where the natural teeth had been lost from disease and neglect. Cleft palates were also treated with artificial vela, and splints made and applied for fractured jaws.

The work of the Operative Department shows an increase over any previous year. 6,414 patients were treated and 12,072 operations performed.

The Museum under the efficient management of Dr. Boardman was enriched by a gift from the late Dr. Elisha Tucker, who died in May, consisting of all his dental instruments. This gift was supplemented later by the presentation of the operating cabinet from Mrs. Tucker and her son.

The illness of Professor Chandler during the year prevented him from giving his usual course of lectures in Mechanical Dentistry. This loss was in a measure supplied by Professor Fillebrown, who also acted as Secretary of the Faculty.

In August, Professor Chandler died, bringing to an untimely end twenty-six years of continuous and valuable service to the School. In 1869, Dr. Chandler was made Adjunct Professor and in 1871 Professor of Mechanical Dentistry. From 1874 until the time of his death he was Dean of the Faculty. His ability as a dentist, coupled with his scholarly mind and gentle instincts made him a man of such influence and power in the School and community that his loss is a serious blow to the School.

Professor Fillebrown continued to act as Secretary until November last, when the new Dean was appointed and entered upon his duties.

Fred Homer Woodcock, D.M.D., Instructor in the Mechanical Department died June 27th, 1895. His service in the School covered a short period, but during that time he proved himself to be an instructor of rare merit. He was a young man of great promise, and his death is to be deeply deplored.

On June 22d, the Faculty voted to establish a Summer course for the purpose of giving instruction to practitioners of good repute, and to somewhat advanced students. The lateness of the action of the Faculty made it impossible to advertise properly this new departure. However, in spite of this shortness of notice, eight students matriculated, and the Infirmary of the School and the Mechanical Laboratory were opened to them on July 8th, under the supervision of Dr. Paul and Dr. Wyllie, Demonstrators of Operative Dentistry, and Dr. Moriarty, Demonstrator of Mechanical Dentistry. A course of lectures began on August 12th, embracing Operative Dentistry by Professor Fillebrown and Dr. Potter, Crown and Bridge Work by Dr. Cooke, and Orthodontia by Dr. Smith. Dr. Stoddard gave special clinical instruction in the Mechanical Laboratory. The course closed on September 9th, the students saying that they had received much instruction, and the Faculty feeling that a good beginning had been made in summer teaching.

EUGENE H. SMITH, *Dean*.

THE BUSSEY INSTITUTION.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR, — I respectfully submit the following report upon the Bussey Institution for the year 1894-95 :

The number of students in attendance was 15.

The usual regular courses of instruction were given in agriculture, horticulture, botany, and agricultural chemistry. The course given by Mr. Motley was interrupted by his death, at the midyear, but the teaching of technical agriculture was continued by the Superintendent of the farm, Mr. Hersey.

Several of the more advanced students attended one or more courses of instruction at Cambridge, in addition to their work at Jamaica Plain.

It is noticeable that the number of students attending the School during this year (15) and the preceding year (16) is larger than had previously been usual. The fact that as many men have already been registered for the current year (1895-96) goes to show that the increase may be regarded as normal, and be counted on as a permanent gain.

F. H. STORER, *Dean.*

THE VETERINARY SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—In the absence of Professor Lyman, I have the honor to make the thirteenth annual report of the School of Veterinary Medicine.

Of the sixteen candidates eligible for the degree, all presented themselves for the final examination; of the nine members of the third class, eight presented themselves and all were successful. One, however, being but twenty years of age, was not allowed to graduate. There were eight other applications for the degree, made by students who had conformed to the requirements of the School as to time of attendance and so forth, but who, for various reasons, had not been eligible to membership in the third class. Of these, three were successful; so that there were ten graduates for the year.

There are now fifty-six registered students in the School, divided as follows: Thirteen in the third class, twenty-two in the second, fifteen in the first, and six in the special. There were twenty-six applicants at the admission examinations, of whom seventeen were successful.

On reviewing the catalogue of students attending the School, we see that they are drawn from a larger area than ever before. During the present year there are in attendance students from Rhode Island, District of Columbia, Connecticut, New Jersey and Maine, as well as from Massachusetts. The slight falling off in attendance was probably due, in some measure, to the fact that on Dec. 10, 1894, at a meeting of the President and Fellows of Harvard College, it was voted "that in the School of Veterinary Medicine the annual tuition-fee shall be \$150, with no additional fee for matriculation or graduation; this change shall apply to students who may hereafter enter the School." The income from tuition-fees during the current year will consequently be larger than it was in the year 1894-95.

There have been two subjects of study added to the course during the present year, both of which are of the utmost importance in the field of comparative medicine. The first of these subjects is to be treated by Professor Theobald Smith in a course of lectures on the Etiology and Hygiene of the Infectious Diseases of the Domestic Animals; the second will be treated in a laboratory course on Pathological Anatomy, to be given by Langdon Frothingham, M.D.V., who

has recently returned from Germany, where he has been devoting himself to a special study of that subject. The course in Meat Inspection will be given during the present year by Albert J. Sheldon, D.V.S.

The facilities given by the School for demonstrating pathological lesions in cattle have been extensive, owing to the connection of members of the Faculty with the State Board of Cattle Commissioners, and to the active measures that have been taken by the Commission during the past year for the suppression of glanders, infectious swine disease, and bovine tuberculosis. Students have had opportunities to be present at the autopsies of all animals destroyed at the State quarantine stations at Brighton, Watertown and Somerville, as well as of those destroyed at Ward's Wharf in the City of Boston. The students have had ample opportunities to study the lesions and various characteristics of the contagious diseases, and the various chronic lesions found at the autopsy table.

The Committee appointed to consider the advisability of establishing two scholarships in the School reported favorably, and thereupon the Faculty recommended that two scholarships be given annually to students entering the School after June 1, 1895, candidates to be meritorious students in need of such assistance, who have been in the School one full year at least. This award will be made by the Corporation on recommendation of the Faculty at the beginning of each academic year. It is hoped that charitably disposed persons may be induced to found other scholarships in the School.

Finance.—The itemized account in the Statement of the Treasurer of the University shows that of the gross receipts of the Veterinary Department, the School earned \$6305.10 in 1894-95, as against \$5305.00 in 1893-94, a gain of \$1000.10. A careful inquiry has shown the running expenses of the School to be \$9029.12. The deficit incurred by the School during the year is, therefore, \$2724.02; an increase over that of the year previous of \$115.02.

The three years' graded course in Veterinary Medicine was first instituted in the United States by Harvard University. Since the establishment of that course, the opinion that the practitioner of Veterinary Medicine should be a graduate of a three years' school has gained the support of the community at large, as well as of the veterinary profession, as is evidenced by the fact that during the past two years the legislatures of Pennsylvania, New York and Maryland, have all passed laws regulating the practice of veterinary medicine, and requiring practitioners to present diplomas from three years' schools in order to obtain a license to practice in those States.

The importance of comparative medicine has been further recognized by the legislature of New York, which, during the past session, made an appropriation of \$150,000 for the use of Cornell University in putting up suitable buildings for a veterinary department, and at the same time pledged itself to so support the school that the University should lose nothing by it. The Pennsylvania legislature of 1891 made an appropriation of \$12,000 for the veterinary department of the University of Pennsylvania for the purpose of building a suitable hospital for dogs. It, at the same time, provided that the State should pay annually \$5000 towards the maintenance of the department. Private benefactors have already endowed the veterinary department of the University of Pennsylvania, so that it receives \$4000 per year from this source.

The conception of the aims and possibilities of a veterinary school is, I fear, very limited in our community. The aim of the School of Veterinary Medicine of Harvard University is not alone that of training men to minister to the ailments of the lower animals. While this is an essential and worthy object, the School has a higher purpose,—that of demonstrating the relations in which such diseases stand to the welfare of the human family. Certain it is that this object is worthy the support and assistance of the State, the University, and those private persons whose munificence and philanthropy are directed to the alleviation of suffering and the improvement of education.

When we consider what has already been accomplished in the discoveries of the various antitoxines, of Jenner's vaccination, of Pasteur's inoculation, of Koch's lymph, and of the relation of human and bovine tuberculosis, and in the recognition of Actinomyces, the possibilities of comparative medicine seem unlimited; but to utilize and apply these discoveries we must train men in the science of comparative medicine. Unfortunately, the Veterinary Department, having no endowment, and being entirely dependent on tuition-fees in the School and paying patients at the Hospital, is unable to take part in the solution of the larger problems of comparative medicine.

The public benefactors in medical research have not been physicians only, but men who have devoted their lives to the study of comparative pathology. The School of Veterinary Medicine should be conducted as a school of science, and not simply as a place to train practitioners; but such a school of science must be endowed.

FREDERICK H. OSGOOD, *Acting Dean.*

THE VETERINARY HOSPITAL.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR,—I have the honor to submit the report of the Veterinary Hospital for the year 1894–95.

Finances. — The total expenditure, including salaries of the Hospital Staff, was \$15,818.54, a saving of \$2,129.50 over that of 1893–94. The total earnings for the year were \$16,843.30. This amount is \$3,283.20 less than the earnings for 1893–94, a diminution which is in part due to the cessation of the subscription plan, as explained in the last report. Patrons who had been subscribers found themselves obliged to pay \$1.50 per day for horses while at the Hospital, instead of the previous charge of \$1.00. This change resulted in some loss of patronage for several months; but as early as January 1st, 1895, or five months after the subscription plan was abolished, the volume of business began to increase. The total earnings, in the Hospital proper, for the last seven months of the year from January 1st to July 31st, were \$7,706.15, against \$7,483.73 for the year 1893–94, showing an increase for the seven months of \$222.42. The earnings for August, September, and October of the present year, 1895, were in excess of the earnings for the corresponding months of any year in the entire history of the Hospital; the earnings for 1895 being \$3,654.42, as against \$2,527.97 for the same months of 1894, an increase of \$1,125.45 for the quarter.

The following table shows the earnings of the Hospital for the past eleven years, that is, ever since its establishment.

Year.	Earnings.	Year.	Earnings.
1883–84	\$9,520.58	1889–90	\$18,021.96
1884–85	14,008.40	1890–91	17,463.22
1885–86	14,926.17	1891–92	20,007.58
1886–87	14,649.15	1892–93	19,873.45
1887–88	12,820.07	1893–94	20,126.40
1888–89	15,066.94	1894–95	16,843.30

Repairs and improvements have been made during the present year to the extent of \$443.32.

Forge. — The work in this division has been very satisfactory during the past year. Demonstrations on the shoeing of lame horses have been given daily to students of the third class.

Dogs. — The following table shows the increase in the number of small animals treated at the Hospital.

1883-84	Dogs	189,	other small animals	15
1884-85	"	230,	"	4
1885-86	"	385,	"	12
1886-87	"	320,	"	8
1887-88	"	259,	"	13
1888-89	"	376,	"	10
1889-90	"	405,	"	21
1890-91	"	418,	"	30
1891-92	"	432,	"	43
1892-93	"	464,	"	46
1893-94	"	568,	"	79
1894-95	"	643,	"	90

I would again urge the importance of a suitable dog infirmary, and would call your attention to the fact that the Veterinary Department of the University of Pennsylvania has already completed a modern dog hospital from the \$12,000 appropriated by the State for the purpose, — a hospital which is light and cheerful, and offers every facility for the proper treatment of the large variety of cases which are presented. The modern dog infirmaries have tile floors, with separate iron cages for the confinement of all cases. The value of such cages is apparent, owing to the ease with which they can be cleansed and disinfected. Isolated wards are also essential for the treatment of skin diseases, distemper, and so forth.

During the past year, the Faculty of the School have realized fully the importance of a free clinic for the satisfactory instruction of students, and as a means of furnishing free treatment for the animals of the poor. We have been looking for some time for a building well-adapted for this purpose. In the month of September last we found on Northampton St., between Tremont St. and Columbus Ave., a building of brick, one story high, with a monitor roof, 100 ft. deep by 60 ft. wide, admirably adapted for a free clinic. The basement was provided with some fifty stalls where animals might be kept temporarily for treatment or observation. The matter was brought to the attention of the Visiting Committee on the day of the opening exercises of the College, and a sub-committee went to the premises, and made an examination of the building, locality, etc. Several subsequent meetings were held, and after considerable discussion and consultation, the Committee offered the Corporation the use of the building for a period of three years, free of any expense. The owner of the building also placed at the disposal of the Visiting Committee \$600, to make such alterations and repairs as the Hospital Staff should deem advisable. Four other gentlemen have also signified their willingness to subscribe \$100 per year for three years toward the securing of instruments, and the maintenance

of the establishment. The matter is at the present time before the Corporation for their consideration.

I trust that the new establishment may be opened within a very short time, and feel certain that there are a sufficient number of charitable persons in our vicinity to maintain such an establishment for the sake of the good it would do.

The record of the out-clinics shows that 642 horses, 338 dogs, and 68 other animals were treated during the year. The Hospital has therefore been able to offer to students available clinics as follows:—

Hospital Wards, daily examination and treatment:—

An average of 14 horses each day	5,146	days of treatment
An average of 26 other animals each day	9,040	“ “
Out Clinics, horses, dogs, and other animals	1,048	“ “
Operations	645	“ “
Examinations for soundness	94	“ “

During the past year there have been treated within the Hospital 390 horses, the combined treatment lasting over a period of 5146 days, also 643 dogs and 90 other animals, the combined treatment lasting over a period of 9490 days.

The table appended shows the classification of cases and the organs involved.

1894-95.	Genito-Urinary.	Locomotory.	Respiratory.	Circulatory.	Nervous.	Digestive.	Special sense.	Operations.	Skin Disease.	New Growths.	Exam. for Soundness.
November . .	12	43	4	4	44	2	44	21	6	3	16
December . .	5	33	7	4	42	4	41	13	8	3	24
January . . .	8	46	8	6	55	7	67	20	9	4	23
February . .	4	37	4	3	36	0	44	23	4	0	26
March	10	51	12	9	40	3	44	44	7	6	43
April	13	48	4	3	37	7	71	21	19	6	33
May	7	55	1	7	59	7	68	25	12	18	29
June	6	33	3	3	38	8	58	19	11	20	16
July	19	34	4	4	54	6	72	33	12	13	16
August	5	42	5	6	52	7	31	36	1	5	36
September . .	6	45	2	2	69	10	46	41	8	4	16
October . . .	16	49	3	2	68	8	59	27	10	12	32
Totals . . .	111	516	57	53	594	69	645	323	98	94	310

Average number of days each animal remained in Hospital, Horses, 13; other animals, 12.

Average number in Hospital per day, 40.

Instruction.—Special instruction has been given by one or more members of the Hospital Staff every morning from 8 to 10, to members of the third class, who assist in the operations, the applications of dressings, and the care of all patients in the Hospital wards, the class being divided into three sections, — dressers, dispensers, and visitors, — serving in rotation in these three capacities. While the dressers are performing their duties in the Hospital, the dispensers are preparing the necessary medicines and dressings in the pharmacy, under the direction of the resident house-surgeon. The visitors in their turn attend all the outside calls with the visiting surgeons, a privilege which gives them an opportunity to study the difference between the methods pursued in the Hospital and in out-door practice.

Clinical lectures are given every morning, from 10 to 11, in one of the Hospital wards, to members of the second and third classes.

Monday Dr. Howard.	Thursday Prof. Osgood.
Tuesday Dr. LaBaw.	Friday Dr. Leonard.
Wednesday . . Dr. Sheldon.	Saturday Dr. Foss.

Surgical operations are performed at the Hospital from 11 to 1 during the day; they numbered during the past year 645 operations.

Examinations for soundness, out-clinics, and out-visits are attended to as presented, it being impossible to have them all at any fixed hour; but as the members of the upper class devote the greater part of the day (when not engaged at lectures) to the Hospital, they get the benefit of a large proportion of these cases. Autopsies are made upon all animals that die in the Hospital.

FREDERICK H. OSGOOD, *Surgeon in Charge.*

THE LIBRARY.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR,—We have added two numbers to our *Bibliographical Contributions* during the year:—namely, a *Bibliography of the Historical Literature of North Carolina* (No. 48), by Stephen B. Weeks, Ph.D.; and an *Analysis of the Early Records of Harvard College, 1636–1750* (No. 50), by Andrew McFarland Davis, S.B., A.M.

The accessions to the University Library for the year, and the present extent of the various departments, are as follows:—

Principal Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) .	10,963	333,987	332,982
Law School	1,684	35,615	4,222
Lawrence Scientific School . .	689	4,559	14
Divinity School	554	26,510	5,462
Medical School	50	2,100	. .
Museum of Zoölogy	569	24,820	903
Astronomical Observatory . .	293	8,003	11,178
Botanic Garden (Herbarium) .	159	6,789	4,230
Bussey Institution	40	3,500	100
Peabody Museum	98	1,458	1,771
Arnold Arboretum	226	5,171	5,678
Total	15,325	452,512	366,540

If to this total of 452,512 volumes be added the 12,087 volumes of the permanent collections in the laboratories and class-rooms, (see below) we have a grand total of 464,599 volumes for the University Library, and if unbound pamphlets be included the total number is 831,134.

The Whitney Library of Geology, a part of the collection in the Museum of Zoölogy, is only in part included in the count of the Museum Library; while, on the other hand, no deduction has been made in the General Library for volumes parted with on exchange account, or for transfers to departmental libraries.

The Medical School depends upon the Collections of the Boston Medical Library Association, kindly thrown open to its use.

The present extent of the laboratory and class-room libraries is as follows : —

	Permanent.	On Deposit.	Totals.
<i>Laboratories.</i>			
1. Chemical	538	1,112	1,650
2. Zoölogical	210	. .	210
3. Geological	103	. .	103
4. Botanical	599	1	600
5. Physical	6	345	351
6. Physical Geography	301	156	457
7. Mineralogical	119	180	299
<i>Class-Rooms.</i>			
1. Classical	2,959	144	3,103
2. History	1,470	1	1,471
3. United States History	781	. .	781
4. Political Economy	761	1	762
5. Mathematics	246	105	351
6. French	1,325	. .	1,325
7. English	75	. .	75
8. Sanskrit	156	. .	156
9. German	347	. .	347
10. Social Questions	636	. .	636
11. Music	102	. .	102
12. Philosophy	288	33	321
13. Semitic	605	. .	605
14. Romance Languages	285	1	286
15. Fine Arts	12	. .	12
16. Fogg Museum	23	. .	23
17. Architecture	140	. .	140
Totals	12,087	2,079	14,166

An assistant is sent from the Central Library every week to examine the shelves of these libraries by the shelf-lists, and the titles of missing books are reported at once to the officer of instruction in immediate charge of the library where such loss or misplacement has been discovered. Temporary loans of books from Gore Hall are made to these libraries to facilitate the instruction of the several departments. Two of these libraries are open for evening use.

Of the accessions to the Gore Hall collections there were added by gift 4351 volumes and 7522 pamphlets; and the accessions also include 928 volumes of bound serials (received in parts), and 434 volumes made by binding pamphlets.

The accessions of recent years to the University Library (excluding the laboratory and class-room libraries) have been as follows:—

In 1879 . . 10,389 vols.	In 1885 . . 14,558 vols.	In 1891 . . 13,276 vols.
" 1880 . . 7,247 "	" 1886 . . 9,191 "	" 1892 . . 13,785 "
" 1881 . . 9,804 "	" 1887 . . 11,924 "	" 1893 . . 22,370 "
" 1882 . . 9,129 "	" 1888 . . 16,468 "	" 1894 . . 15,788 "
" 1883 . . 9,818 "	" 1889 . . 12,253 "	" 1895 . . 15,325 "
" 1884 . . 12,360 "	" 1890 . . 16,051 "	

The following table shows the use of Books at Gore Hall in 1894–95 as compared with previous years:—

	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
1. Books lent out . . .	68,892	74,906	70,036	71,434	80,380	82,618	81,331
2. Used in the building	14,299	17,203	15,861	19,648	23,671	22,442	23,500
3. Overnight use of reserved books . . .	21,802	24,989	21,706	20,469	24,482	25,377	20,985
Total (excluding No. 3, which is incl. in No. 1)	83,191	92,109	85,897	91,082	104,051	105,060	104,831
No. of books reserved .	5,848	6,215	6,253	6,397	6,652	7,427	6,847

The increasing number of books reserved—of whose hall-use no record is kept—has a tendency to decrease the number of volumes used in the building, of whose use record is made. The establishment of class-room libraries checks the increase of the figures against the class marked 3 in the above table. It is the observation, however, of those in charge of the reference service, of which no statistics are kept, that it is constantly increasing, year by year, and that the increase for last year was very great.

DELIVERY ROOM COLLECTION.

	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
Bound Periodicals	3,198	3,198	3,287	3,340	3,444
Reference Books	2,348	2,409	2,562	2,704	2,696
Totals	5,546	5,607	5,849	6,044	6,140

The number of students of Radcliffe College who have borrowed books during the past eight years is shown in the following table:—

BORROWERS FROM RADCLIFFE COLLEGE.

Years.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
1. Borrowers . . .	66	72	84	82	111	132	108	156
2. Books borrowed .	1,545	1,531	1,329	930	886	1,057	1,162	1,672
3. Reserved books .	301	299	286	284	127	25	132	148

The figures in the third class are included in class No. 2. Their own collection of 8313 books supplies naturally their main needs.

The following table shows for a series of years the use made of "Admission-Cards," by which students have access to special classes of the books for investigation at the shelves:—

ADMISSION-CARDS.

	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
History	74	71	81	53	36	41	59	68	63
Science	12	14	9	6	8	9	28	27	9
Art (including Music) . .	13	16	24	19	15	13	4	8	5
Literature	62	54	27	32	38	45	62	63	58
Classics	47	42	24	22	18	22	26	45	44
Philosophy	8	9	16	9	12	16	5	17	12
Theology	15	11	6	4	8	9	12	3	3
Political Economy . . .	64	49	25	13	9	14	9	15	15
Education . . . . .	..	..	..	..	..	..	..	3	..
Total students	295	266	212	158	144	169	205	249	209
Times of use	7,375	7,980	8,390	6,490	2,512	3,629	4,560	5,974	4,352

The percentage of users among the undergraduates during recent years is given in the following table, which shows, however, only such students as were registered at the general delivery desk in Gore Hall, and drew books at that desk:—

	1879-80.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
Seniors	88	90	90	92	96	99	97	91	89	92	91	91	97
Juniors	83	88	93	96	90	98	99	95	95	92	90	90	96
Sophomores	83	85	86	93	92	94	90	90	84	82	77	79	76
Freshmen	65	80	80	78	69	77	69	67	59	61	62	59	59

STUDENTS' USE OF THE GORE HALL LIBRARY.

STUDENTS OF	1889-90.		1890-91.		1891-92.		1892-93.		1893-94.		1894-95.	
	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.
Divinity . . .	36	36	41	36	39	39	41	37	47	41	50	40
Law	254	151	279	147	363	165	394	161	353	169	404	176
Scientific .	65	37	88	42	118	71	181	93	280	139	308	144
Resident Grad.	93	81	110	92	176	151	190	157	241	209	242	204
Senior Class .	278	254	289	260	271	251	327	300	323	296	327	318
Junior Class .	244	232	254	232	304	281	327	298	352	320	348	335
Sophom. Class	282	253	289	245	331	274	385	298	349	313	425	323
Freshm. Class	323	215	366	217	381	234	409	254	425	252	399	236
Sp. Students .	144	100	141	123	169	114	149	105	162	116	168	127
Total . . .	1719	1359	1857	1404	2152	1580	2404	1703	2577	1855	2671	1903

Nineteen years ago only 57% of all the College students used the Library. In the last year, of the 1667 undergraduates only 328 failed to borrow books, and of this last number, 257 drew out "reserved books," of which no record was made at the General Delivery. This reduces the number of students who made no recorded use of the Library to 71, out of a total of 1667. The libraries of the class-rooms and laboratories, as well as those of the students' clubs, provide reading, special as well as general, for a large number of undergraduates, including, very likely, some of the 71 who made no use of Gore Hall.

There is no record made of the use of the 564 periodicals, current numbers of which are on file in the Reading Room and open to everyone's inspection without formality.

BORROWERS REGISTERED AT GORE HALL.

	1891-92.	1892-93.	1893-94.	1894-95.
Students	1,831	1,929	2,104	2,069
Instructors	196	160	174	198
Others	298	362	489	645
Total	2,325	2,451	2,767	2,912

SUNDAY USE.

	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
Days open .	37	37	37	37	37	37	37	37	36
Users . . .	2,880	2,894	3,024	3,089	3,104	3,284	3,716	3,658	3,634
Average . .	77	78	81	83	83	88	100	99	100
Highest no. .	118	106	108	118	132	119	135	136	131

The number of scholars from a distance who come to Cambridge for the purpose of making use of the Library is constantly increasing, and during the last two years 120 such persons have been granted temporary privileges in the Library, borrowing 1162 volumes; and under restrictions indicated in the following circular, 570 volumes have been sent to 102 persons or institutions, including these colleges: Amherst, Brown, Bryn Mawr, Chicago, Clark, Cornell, Dartmouth, Haverford, Kansas, Leland Stanford Jr., Michigan, Middlebury, North West, Princeton. Rochester, Texas, Union, Union Theological Seminary, Vermont, Wisconsin, Yale.

Library of Harvard University,

Cambridge, Mass., U. S. A.

It is a custom, by courtesy, of this Library to meet requests for the loan of its books to distant scholars on these conditions:

First. Such scholars must be actually engaged in teaching or authorship, and need the books for such reason.

Second. Some established and known library, near such scholar, must apply for the books in behalf of such scholar; must assume responsibility for the books to us; and may either allow such scholar to use the books on its premises or lend them to him under the rules governing the lending of its own books.

Third. Books cannot be sent, if it be judged necessary by us to confine their use to Cambridge, either because they are likely to be needed here, or are too rare to be easily replaced, or too costly to be risked in transportation.

Fourth. Expenses of transportation must be borne by those applying; Adams's Express must be used where possible in the transportation; receipt of the books must be acknowledged at once; and when sent back, notice of such sending must be forwarded to us by mail at the same time. Promptness in these matters is necessary to enable us to trace the books if they go astray.

The library authorities cannot undertake to make investigations for distant correspondents. All letters asking information will be answered so far as it can be done without entailing research. It sometimes happens, that the library is able to turn over to some one of its frequenters a commission for making searches or translations; but the library assumes no responsibility for the faithful performance of such work, nor does it act as an intermediary in fixing or settling terms of payment for such services. Communications must be had directly with such copyists or translators, who will be asked to open correspondence with the applicant.

May, 1895.

Mr. Frank Carney, who has immediate charge of the shelves, reports that 3975 volumes have been permanently placed in the new stack since the last report, making 141,392 so placed out of the volumes constituting the Gore Hall collection.

Mr. Carney verified the shelf-lists of the classifications in the stack and adjacent parts in April, showing about 185,000 volumes. The number of volumes which failed to be accounted for was 77, a large decrease from last year's report. Of those reported missing in previous years 39 were found in their places, having been silently returned during the year. Of books reported missing since 1883 there are still 636 unaccounted for: 427 having disappeared from the reserved books, and 209 from the stack. Of these 77 unaccounted for volumes of the year just closed 39 have disappeared from the books of reference, reserved books, and other collections exposed to the handling of all the frequenters of the Library, the other 38 having disappeared from the shelves to which only the staff of the Library, officers of the College, and a limited number of other persons have access. In the stack, 125 books were found on the wrong shelves, half of them being found in English and American history and literature. More effort than usual has been made during the year, to keep the shelves in order, so as to correct the misplacement which an increased access to the shelves naturally brings. The parts most used have been twice in the year carefully examined, and a cursory examination of parts has been made almost daily,—in addition to the annual enumeration made by Mr. Carney.

The following table will show the losses in volumes for thirteen years. It should be remembered that these losses only pertain to that portion of the Library which has been rearranged and to all new books received since 1887. The rest of the Library does not afford records by which an examination can be satisfactorily made:—

LOST BOOKS, 1883—1895.

Years.	Reported lost.	Later found.	Now missing, 1895.		
			Reserved.	Stack.	Total.
1883	78	37	17	24	41
1884	51	41	3	7	10
1885	70	34	24	12	36
1886	48	25	9	14	23
1887	35	21	8	6	14
1888	49	29	13	7	20
1889	34	20	10	4	14
1890	93	57	24	12	36
1891	175	30	118	27	145
1892	65	19	24	22	46
1893	53	19	21	13	34
1894	165	25	117	23	140
1895	77	..	39	38	77
Totals .	993	357	427	209	636

This unsatisfactory condition has grown out of various causes: First, as regards the stack, it is open to the entire staff of instruction; to students who hold cards of admission; to the Library staff; and to an occasional special investigator. Such an aggregate of frequenters will have an inevitable percentage of careless people, to use no harsher term. Secondly, as regards the reserved and reference books, they are practically open to the handling of any one who chooses to touch them, and offer a field for depredation to any irresponsible person.

Of the 39 books missing in past years and found during this year, the following table will show the chances of recovering those more than a year gone.

Books.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	Totals
Reserved	0	2	0	1	1	0	4	8
Stack	1	1	1	1	1	5	21	31
Totals	1	3	1	2	2	5	25	39

Mr. Carney also reports: "In December, 1894, the books packed in boxes in the cellar of Appleton Chapel (carried thither earlier to make room for newer books) were moved to the Library of the Divinity School, and made accessible there under the charge of the librarian of that department.

"In May, about 60,000 volumes from Old Gore Hall were placed and made inaccessible in the basement of Perkins Hall, to remain there till the changes in Gore Hall were completed.

"In June, after the examinations were over, the periodicals, and the reference and reserved books, kept in and near the Gore Hall reading room, were arranged in the lower story of Massachusetts Hall, which was thus made a temporary reading room, while the changes in the Library were going on." Since the present term opened, some relief has been found by transferring a part of the books to the History Library in Harvard Hall.

The changes in the building thus alluded to included an entire transformation of the original Library structure, by which a three-story stack is to fill the lower part of the building, the second story coming on the level of the present delivery room. By stairs opening out of this latter room the top of the third story is to be reached, which is to be made the floor of a reading room of the full size of the building. To light this, a skylight has been placed on a new roof, and in the windows new and more open sashes have been placed. The Art Room is to be connected with this new reading room, to increase its seating capacity. The lower stack in the delivery room has been removed, and the public card catalogue has been so placed as to make more space for the waiting public. The whole building is to be wired for electrical lighting. The old boiler room is to be put in order for the storing of newspapers.

The contract was signed before the close of the last College year, and called for the completion of the work before the opening of the new year. Delays have taken place; two months and more have been lost in waiting for the contractor for the stack, and progress has been slow since this part of the work was begun. Several months are likely yet to pass before the new construction is available. Meanwhile the Library is not able to give its usual help to the instruction of the College.

Mr. Tillinghast, the Assistant Librarian, furnishes the following report of the work of the Catalogue department: —

TITLES CATALOGUED.

	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
College Library	7,494	9,082	7,969	7,753	8,350
Dep't and Class-room Lib. . .	2,654	2,381	1,772	2,264	2,008
Totals	10,148	11,463	9,741	10,017	10,358

The work of the past year may be compared with the work of other years as follows : —

Year.	Gore Hall cards prepared.	Titles catalogued for departments.	Volumes received in Gore Hall.
1885-86	32,580	957	6,730
1886-87	29,229	1,021	9,108
1887-88	23,696	1,291	10,885
1888-89	21,256	1,721	9,045
1889-90	24,384	1,438	13,140
1890-91	21,252	2,654	9,606
1891-92	27,167	2,381	9,726
1892-93	23,975	1,772	11,446
1893-94	20,168	2,264	10,326
1894-95	19,989	2,236	10,963

I append the summary of some points in the more extended report which Mr. Tillinghast has made.

“It may be safely said that during the past year, several hundred more titles have been catalogued than last year, with a slightly decreased number of work-hours.”

“During the year Mr. Archibald C. Coolidge signified his readiness to increase the Slavic department of the Library, and authorized the purchase of a large collection — throwing out such as we already had — advertised by Harrassowitz of Leipzig. The gift amounts to about 1371 titles. They have not yet been taken from the cases in which they arrived, as in the present condition of the Library building, there is no space to do the necessary work upon them; but when the alterations now in progress are completed, and other more pressing work is done, they will be duly prepared for the shelves.

A large lot of Chemical dissertations bought at the instance of the Chemical department, will be, by agreement with Professor Jackson, placed in the library in Boylston Hall, without any form of catalogue, but made accessible by some classified arrangement. That department assumes the responsibility of not ordering duplicates of those dissertations.

In March, Professor Lanman took two boxes of Sanskrit mss. to his home for the purpose of beginning a catalogue of our collection.

The use of printed cards has on the whole served very well its purpose of getting titles more promptly into the catalogue; but we suffer much inconvenience from the work at the printing office being done without regular speed, owing to interruptions for other classes of College printing. Since the discontinuance of the Library Bulletin

in October, 1894, we have printed our titles in large type, and on galley strips and cards only. We print fifty copies of such strips for various uses.

In order to have a full list of the books on architecture in the College Library and in the class-room Architectural Library, an architectural catalogue not long since issued by the Boston Public Library has been made the basis of such a list. The titles in the University Library have been therein checked, and the other titles added. This has been done at the expense of the Architectural Department.

An arrangement of State and Town Documents has been begun, and the work has proceeded as far as "Nevada," under the following system for each state.

1. General State Documents.

2. Executive Department.

3. Miscellaneous Documents.

4 to 10. (Reserved, to be used as need is developed).

11 to 36. Town Documents, — a number being given to each letter (initial) of the alphabet."

Revision to perfect the Catalogue is onerous and steady, causing the handling of cards, independent of new cataloguing, to a large extent, mainly for the purpose of adding "Continuations." The figures of this work for the last few years are as follows:

1888	18,717	1892	12,903
1889	11,742	1893	14,455
1890	13,086	1894	10,727
1891	13,628	1895	11,736

The large accumulation of bound pamphlet volumes, which often give twenty or thirty titles to a volume, made up during the year from the tracts which were a part of the Parkman Collection, in accordance with a plan of binding in volumes all pamphlets which are on subjects of current interest, — has increased largely the amount of catalogue work left undone at the end of the year, — probably about 5000 titles for such composite volumes. These volumes, however, are arranged according to their place in our system of classification, and made in this way immediately serviceable, while awaiting the cataloguer. There must be added to these arrears, the books of the Coolidge Slavic Collection, and some unimportant books, mainly gifts, which swell the entire number to over 5800 titles, including the usual fresh accessions arriving during the last fortnight of the year. It is hoped that the ability to make longer hours on short and dark days, through the introduction of the electric light, will serve to diminish this heavy accumulation of undone work; though I do not look for imme-

diate effects till the new classifications of the Library in the new stack relieve us of much fruitless labor, and all our work is made easier by increased accommodations in the official spaces of the building.

The work of the Ordering department, in the immediate charge of Mr. Potter, is shown in the following statement:—

At the close of the Library year the estimated cost of orders then out (including “continuations,” reckoned at \$6665) was about \$10,909, and it was expected that about \$6280 of these would come in, to be paid for during the coming year. We have an income for the next year of about \$19,173.78; against this amount must be set off about \$9380 (that is: orders out, \$6280; periodicals and binding, \$2800; freight, \$300), leaving a free balance of \$9793. It is further to be considered that some of the items included in our annual book-income are funds with such specific objects that they may be left out of view in providing for general purchases.

FINANCIAL CONDITION (*Gore Hall only*).

	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
Income for books* .	\$16,682	\$16,565	\$18,824	\$18,922	\$18,790	\$19,848
Spent	15,172	13,905	16,566	16,903	15,108	14,616
Balance	1,510	2,660	2,258	2,019	3,682	5,232
Appropriation . . .	15,480	11,920	18,700	18,150	none	19,475
Unpledged balance†	5,672	9,602	9,501	8,284	5,121	11,606

PAYMENTS AND PURCHASES (*Gore Hall only*).

Years.	Income, excluding balance brought forward.	Payments.	Vols. bought.	Vols. of serials added.	Sum of last two columns.	Average cost per vol.
1884-85	\$15,094	\$16,534	5,932	560	6,492	. .
1885-86	15,332	13,923	3,032	682	3,714	\$3.75
1886-87	17,052	14,549	4,490	746	5,236	2.77
1887-88	15,732	16,061	5,389	798	6,187	2.59
1888-89	15,799	17,339	4,925	638	5,563	3.11
1889-90	15,275	15,137	4,168	838	5,006	3.02
1890-91	15,853	13,905	3,230	855	4,085	3.40
1891-92	16,491	16,566	4,904	694	5,598	2.96
1892-93	16,583	16,903	5,624	841	6,465	2.61
1893-94	16,399	15,108	2,932	928	3,860	3.19
1894-95	16,166	14,616	5,203	928	6,131	2.38

* The items of income include unexpended balances of the previous year.

† What is called “unpledged balance” is income free from obligations for serials and outstanding orders.

The figures for income and payments, in the above tables, are taken from the Treasurer's Report, except those for the last year, which are made up from the library accounts. The average cost per volume for ten years is \$2.97.

SUMMARY OF NEW ORDERS SENT.

	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
Gore Hall	\$4,161	\$10,506	\$9,383	\$3,968	\$12,445
Departments	5,330	2,770	2,663	2,934	3,240

ESTIMATED AMOUNT IN DOLLARS OF ORDERS SENT TO PRINCIPAL AGENTS
(Gore Hall only).

	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
American . . .	1,300	1,185	895	724	2,157	1,488	1,055	2,612
English . . .	2,150	2,551	2,043	1,334	2,844	2,532	1,085	3,390
French . . .	1,035	910	1,234	585	1,437	1,144	544	1,640
German . . .	1,950	2,450	1,410	1,139	3,204	3,537	1,072	3,536
Italian . . .	112	325	200	111	717	443	138	965
Scandinavian .	56	106	52	50	78	81	59	209
Spanish . . .	..	..	..	..	69	158	15	92

The division among agents gives only an approximate representation of division by languages, since books in all languages may be bought in London, as Spanish and South American books usually have been, and Slavic books are mainly bought through the German agency. We usually buy more titles in German than in any other language.

TABULATION OF ORDERS (*University Library*).

Order slips on hand October 1.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Book orders out . . .	2,875	1,242	2,350	2,658	1,423	686	2,140
Continuation orders out	2,163	2,272	2,400	2,539	2,789	3,078	3,125
Total active orders .	5,038	3,514	4,750	5,197	4,212	3,764	5,265
Cancelled orders . .	7,200	7,675	8,600	9,200	9,900	10,400	11,000
Deferred orders . . .	533	1,158	942	984	668	1,227	925
Countermanded orders	..	1,273	..	..	795	1,160	700
Grand total	12,977*	13,930*	14,292	15,381	15,575	16,551	17,990

* Including some items now embodied in cancelled orders.

The estimated cost of the continuations, which is a fixed liability for our book funds, — though only about one-half of the charges is likely to be actually incurred each year, owing to the irregularity of such serials, was for the past year, \$7562; for the year to come, \$6665. “This reduction has been obtained,” says Mr. Potter, “not by any cancellation of orders, but by a thorough revision of the estimate and by throwing out such continuations as seem fairly certain not to come during the year. There are also outstanding for department and class-room libraries, continuations amounting to \$1334. The total number of cards for continuations is 3125, an increase of 47 since last year. While in practice I have allowed for one-half of the continuations to come in each year, it appears, from an actual count that during 1894–95, nothing was received on about 707 of such orders for continuations. It must be borne in mind that “continuations” in our technical sense, exclude periodicals, for which with their cost of binding, we have an annual charge of about \$2800. If this be included, the total cost of publications, received in this library, and issued at intervals in parts, amounts yearly, at present, to \$6132.”

The following table shows the number of books recommended to be bought for the University Library, the number of these already in the Library; the number ordered (including those reordered), and of these last the number for which there was reason for haste in transmitting the order: —

Purchases and Gifts.	1889-90.	1890-91.	1892-93.	1892-93.	1893-94.	1894-95.
Titles, Recommendations . .	4,404	4,545	4,326	5,396	3,575	7,820
In the Library	819	711	953	1,334	745	2,213
Ordered	2,505	4,863	3,598	3,744	2,192	5,609
In haste	128	122	197	220	200	539
Gifts in books and pamphlets .	12,673	9,992	5,566	17,888	22,624	11,873

It must be understood that the figures in a column have no relation to other figures in the same columns, for books may be recommended in one year and ordered in the following year, etc.

The “haste” orders are as a rule sent forward within twenty-four hours. If there is a large number of these at one time, it necessarily causes delay in sending forward other orders. The rectification of titles handed in, and the search to ascertain if the Library already has the work, complicated often by the uncertainty of the main catalogue entry, cause an amount of labor little comprehended outside the Library. A sale catalogue of books in some department is handed

in freely checked. The catalogue may be carelessly made, and the consequent labor and delay in forwarding orders are considerable. Sometimes there come from abroad several boxes of books at one time. These engross all the attention of the staff and cause other delays. Some departments mark quarterly lists of publications in their lines of study, so that they present large numbers of titles for consideration at one time. This also interrupts the steady progress of the ordering department. There is an occasional crippling of the staff by illness. It is for these reasons that there is a marked difference, month by month, in the expedition with which orders are forwarded. It so happened that in April, we had the largest number of orders handed in for any month, namely 3047, and yet the delay in dispatching orders was only a week; while in August, the vacation season, with only 204 orders, the average delay, owing to causes above suggested, reached nineteen days. The average delay for the year on general orders, not specifically hurried, was about eleven days.

We received 27 shipments of boxes from foreign agents during the year, ranging from none in October to seven in July. Separated by agents they show 1575 volumes from agents in England; 1063 from France; 4086 from Germany; 296 from Italy; and 120 from Scandinavia. The total receipts from abroad for the year were 7140 volumes, against 4524 in 1893-94, and 6274 in 1892-93.

The success of our principal agents in filling orders is shown in the following table, by *per cent.* :

Agents.	1892-93.	1893-94.	1894-95.
Sever (Cambridge)	95	97	96
Littlefield (Boston) . . . . .	..	57	77
K. Paul, etc. (London)	89	81	85
Reinwald (Paris)	84	79	90
Harrassowitz (Leipzig)	85	80	91

It should be borne in mind that there is a different degree of difficulty in filling orders lodged with the several agents, and when orders are sent from second-hand Catalogues, there is a chance of the books having been sold.

I desire to emphasize Mr. Potter's subjoined view of an ordering system. Theoretically, a college library depending largely on the professors' prompting in the purchase of books, is in a very advantageous position to secure symmetrical developments; but in practice this method secures much unevenness of growth for several reasons. Subjects are occasionally dropped from the curriculum, leaving no

one to look after their literature. There is a large difference in the assiduity with which professors suggest purchases for their departments. Sometimes a professor active in this way is succeeded in office by another having little interest in the work. Again a new man will find himself obliged to order titles omitted in past years, and be crippled in getting current productions with his appropriation. The Library seeks as far as it can to make up for lapses of interest, but not always successfully. Failure during the past year to avail fully of the advantages of appropriations is shown in the following table. We allow a professor's orders to exceed his appropriation by one-quarter, finding in practice that it is safe to do so, with the uncertainty of orders being filled by the agent.

Subject.	Appropriation.	Appropriation plus 25 per cent.	Amount ordered including continuations.
American History	\$250	\$312	\$131
Chemistry	200	250	187
German	300	375	187
Government and Law	100	125	45
International Law	150	187	59
Military Art	200	250	89
Physics	200	250	144

Other departments might be shown to have failed in keeping up their orders, but in a less degree; and in all cases professors have been seasonably prompted by the Library. I am sorry to say that there has been more or less neglect when current titles have been sent to some professors for their information. On the other hand there are professors who are always ravenous for acquisitions of books, and upon whom the Library is accustomed to put checks to prevent undue expenditure of money. The Librarian is cautiously feeling his way in supplementing the orders of those entitled to send in titles, who are lax in their attention to the matter. The interests of a symmetrical development of the Library demand some such remedy.

There is a considerable part of the Library income for books, which is used by the Librarian in the purchase of general books, works of reference, bibliographies, transactions of societies, and good books suggested by outsiders, professors (not specially interested in them as teachers), and students, and in covering topics not taught in the College. If it were not for the active interest of the Librarian and his staff, there would be greater inequalities in the growth of the Library, than are now apparent.

Mr. Walter B. Briggs, who has had temporary charge of the map department, reports as follows : —

“ The additions of the past year to the map collection comprise 6 roller maps; 24 atlases; to the portfolio collection, 69 titles, embracing 661 sheets.

An accession of note is *Oppidum Cantebrigiae. Ric^d Lyne, 1574*. This is said to be the earliest known plan of Cambridge, and was drawn to illustrate the history of the University by Dr. Caius, published in London in 1574. It is so scarce that until lately the copy of it exhibited in the Kings' Library at the British Museum was stated to be unique. This copy is a gift to the Library from Henry Yates Thompson, of London, who found it pasted in at the end of a copy of Saxton County Atlas, 1579.

The Government Topographical Surveys of Denmark, Sweden and Serbia are among the maps added by purchase.

Among the maps from the library of the late Professor E. W. Gurney, catalogued during the year, are some of especial value, e. g. : —

The Topographical and Military Atlas of Germany in 204 sheets, with supplement of 45 sheets, and two volumes of text, published by the Weimer Geographical Institute in 1807–13.

Streit and Weiland's Topographical and Military Map of Prussia, Poland and Posen, in 85 sheets and one volume of text, published in the same Institute in 1815.

J. C. Hurtern's Map of Swabia, published in Augsburg in 1679, by H. G. Bodenehr.

F. W. Klenner's Topographical and Commercial Map of Austria-Hungary, Wien, 1833.

Spain and Portugal in 19 sheets, by Lopez and Güsseldorf, 1781—1805. Capitaine's Belgium (1792–?) in 22 sheets.”

JUSTIN WINSOR, *Librarian*.

NOVEMBER, 1895.

THE HERBARIUM.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR, — During the past year no important changes have been made in the Herbarium staff, which at present includes, besides the curator, two trained assistants, engaged chiefly in determinative work, a collector, a librarian, and three assistants of less scientific training employed in the mounting, sorting and distributing of specimens. The number of assistants of the class last mentioned has been kept larger of late than in former years, both to free the time of the others for work of a higher order, and to make possible the large additions, which are now being made to the organized portion of the Gray Herbarium.

The gross amount of material received during the year has considerably exceeded any annual acquisition of recent years, and amounts to 20,166 specimens. Much of this material comes from little explored regions, difficult of access, and contains accordingly an excellent percentage of rare and noteworthy plants. The following among the numerous collections acquired during the year merit special mention on account of their size or importance. I. By gift or exchange: From Mr. F. V. Coville, Chief Botanist of the United States Department of Agriculture, (1) a set of 473 plants, collected in Western Mexico, by Dr. Edward Palmer, during the years 1891 and 1892, a collection of much value, critically determined by Dr. J. N. Rose, and containing 41 types of new species and varieties; (2) five packages of undetermined plants (391 specimens) collected by Mr. E. W. Nelson in the mountains of Oaxaca and Guerrero, the latter a region hitherto unexplored botanically; (3) a set of 228 plants of Nebraska, collected by Mr. F. Clements; from Professor John Macoun, Canadian Naturalist, and Mr. J. M. Macoun, Curator of the Government Herbarium at Ottawa, 220 plants of Assiniboia and 73 plants of Vancouver Island; from Rev. L. C. Smith and Professor C. Conzatti, 494 plants of Oaxaca, for determination, including a number of new species; from the late Professor D. C. Eaton, about 180 specimens secured by a sailor upon the northwest coast of Hudson Bay; from Dr. F. W. Klatt of Hamburg, 98 specimens, chiefly of *Saxifraga*, *Sedum*, and rare Central American *Compositæ*; from the British Museum of Natural History, 85 plants from Fernando do Noronha; from Pro-

fessor L. F. Henderson, 145 plants of Idaho; from the Missouri Botanical Gardens, a set of 298 plants of the Azores, collected and critically determined by Professor William Trelease; from J. W. Congdon, Esq., 180 plants of the Yosemite Valley; from Professor F. Buchenau of Bremen, 144 plants, including a number of rare *Junci*; from Dr. C. F. Millspaugh, Curator of the Field Columbian Museum, 79 plants of Yucatan, a region poorly represented in all herbaria; from Mr. F. C. Straub, 139 plants of Florida; from Henry G. Bryant, Esq., 700 specimens collected in Greenland and Ellesmere Land on the Peary Auxiliary Expedition; from the Philadelphia Academy of Natural Sciences, 69 plants of Greenland, collected on the Peary Relief Expedition; from F. H. Lamb, Esq., 285 plants of Sinaloa; from Mr. A. B. Seymour, 474 plants from the Gulf States; from Professor Alfred Dugès, 63 plants of Guanajuato, Mexico. II. By purchase: From Professor O. D. Allen, 3306 specimens of special excellence (showing in many cases both flowers and fruit as well as foliage), collected in the Nesqually Valley on the base of Mt. Rainier, for distribution in about 30 sets from the Gray Herbarium; from Dr. H. H. Rusby, 782 plants of Bolivia; from Mr. G. V. Nash, 872 plants of Central Peninsular Florida; from Mr. B. F. Bush, 170 plants of Missouri and 201 plants of Oklahoma Terr.; from W. N. Suksdorf, Esq., 166 plants of Washington State; from Rev. A. C. Waghorne, 178 mosses of Newfoundland and Labrador; from Professor John Macoun, 288 phænogams and 140 cryptogams collected on Behring Sea, also 133 Canadian mosses; from Professor P. MacOwan of Cape Town, two centuries of South African plants; from Mr. C. L. Shear, 220 plants of Kansas; from Professor Brothier of Helsingfors, the second century of Ule's Bryotheca Brasiliana. III. Collections made by the officers of the Herbarium: from Newfoundland 7021 specimens, secured by the Curator, assisted by Mr. Hermann von Schrenk, on a collecting expedition described in the last report; from Oaxaca, Mexico, 840 plants collected by Mr. C. G. Pringle, containing many novelties; from Northern Maine, 150 plants collected by Mr. M. L. Fernald; also 408 plants of Eastern Massachusetts, collected by various members of the staff, to form the nucleus of a synoptic local herbarium, which, when further developed, cannot fail to be a useful adjunct to the larger general one.

The number of sheets of mounted specimens added to the organized portion of the Gray Herbarium during the year has been 10,246. This does not include numerous specimens which have been affixed to sheets already in the Herbarium. The number of duplicates sent

out to other institutions has been 7114, and of plants sold, 707. The number of books and pamphlets added to the library has been 493.

Much of the determinative work of the year has again been directed to the flora of Mexico, which is now the richest field for botanical exploration in North America. It is a pleasure to state, that of the numerous and excellent collections made in different parts of that country, by various collectors during the past year, nearly all have been sent to the Gray Herbarium for study. These collections, including those of Messrs. Pringle, E. W. Nelson, L. C. Smith, Conzatti, Dugès, Millspaugh, and Lamb, have all yielded new and noteworthy plants and contributed much to the knowledge of the flora. Aside from the Mexican plants, the most important determinative work of the year has been devoted to the collection of the Peary Auxiliary Expedition, to the Newfoundland plants, and to a collection secured by Dr. G. Baur in the Galápagos Archipelago and mentioned in the last report. Dr. Baur's specimens have been of exceptional interest, since they show certain formal and racial variations with an important bearing upon the still obscure origin of the flora, and indeed of the islands themselves. The labor of sorting and determining these extensive acquisitions of material has been largely entrusted to the trained assistants, Messrs. Fernald and Greenman, and the Curator has reserved the greater part of his time for the continuance of the *Synoptical Flora of North America*. Of this work, a fascicle including the Orders *Ranunculaceæ*, *Magnoliaceæ*, *Anonaceæ*, *Menispermaceæ*, *Berberidaceæ*, *Nymphæaceæ*, *Sarraceniaceæ*, *Papaveraceæ*, *Fumariaceæ*, *Cruciferae*, *Capparidaceæ*, *Resedaceæ*, *Cistaceæ*, *Violaceæ*, *Canellaceæ*, *Bixaceæ*, and *Frankeniaceæ*, was sent to press about the 1st of June. Owing however, to the technical nature of the work and the consequent care necessary in its composition and proof-reading, progress in the printing was slow, and the publication could not be made before the end of the academic year. In the preparation of such parts of a second fascicle as are not covered by Dr. Gray's manuscript, the following specialists have most kindly consented to assist: President J. M. Coulter, of Lake Forest University and Lecturing Professor of Botany at the Chicago University, Professor William Trelease, Director of the Missouri Botanical Gardens, and Professor L. H. Bailey of Cornell University.

It is now necessary to call attention to the pressing financial needs of the Herbarium. The interest upon the permanent fund, even when supplemented by the income from the Gray copyrights, is wholly

insufficient for the proper support of the institution. For several years the income has been augmented by annual subscriptions from the members of the Visiting Committee, but the last of these generous gifts was paid at the end of the year 1893-94, and during the past year the Herbarium has received no financial assistance. Unless some further endowment, or at least a renewal of gifts for present use, can be secured, it will be necessary to dismiss a number of the assistants and cut down expenses in every way. Even the purchase of important sets of plants and books must be discontinued, which will mean serious and permanent injury to the Herbarium and its library. This is a time of great activity in botanical exploration, and many sets of plants, which will be invaluable to future specialists, are now being distributed. Such sets are quickly taken up by permanent institutions and, like books in great libraries, never come again upon the market. Accordingly, if the Gray Herbarium through temporary lack of funds is unable to secure the important sets distributed in the next few years, the types and noteworthy specimens contained in such sets can never be secured, and the injury to the completeness of the Herbarium will be to a great extent irreparable. Furthermore, any serious reduction in the number of assistants will throw upon the remainder of the staff much time-consuming routine work and in a great measure prevent activity of a higher order.

The usefulness of the Gray Herbarium in American science is amply attested by the extensive call for its publications and by its wide correspondence, hundreds of botanical inquiries from all parts of the country being received and answered every year; but without further financial assistance its usefulness and prestige will be quickly impaired.

The publications of the Gray Herbarium during the year have been as follows: —

The Field, Forest and Garden Botany, a simple introduction to the common plants of the United States, east of the 100th meridian, both wild and cultivated. By the late Asa Gray, revised and extended by L. H. Bailey.

Contribution IX (of the new series). By B. L. Robinson and J. M. Greenman. Including: I. On the Flora of the Galápagos Islands as shown by the collections of Dr. G. Baur, II. New and Noteworthy Plants, chiefly from Oaxaca, collected by Messrs. C. G. Pringle, L. C. Smith, and E. W. Nelson. * III. A Synoptic Revision of the Genus *Lamourouxia*. IV. Miscellaneous New Species. *Am. Jour. Sci.* L, pp. 135-176.

On the "List of Petridophyta and Spermatophyta of Northwestern America" prepared by the Nomenclature Committee of the Botanical Club. By B. L. Robinson. *Bot. Gaz.* XX, pp. 97-103.

Note on *Salix balsimifera*. By M. L. Fernald. *Gard. and For.* VIII, pp. 28.

On the application of "once a synonym always a synonym" to binomials. By B. L. Robinson. *Bot. Gaz.* XX, pp. 261-263.

Two new mountain plants. By M. L. Fernald. *Bull. Torr. Club*, XXII, pp. 273-274.

A red-seeded dandelion in New England. By M. L. Fernald. *Bot. Gaz.* XX, pp. 323-324.

A further discussion of the Madison Rules. By B. L. Robinson. *Ibid.* XX, pp. 370-371.

Supplement to the Portland Catalogue of Maine Plants. By M. L. Fernald. *Port. Soc. Nat. Hist.* II, pp. 73-96.

B. L. ROBINSON, *Curator*.

NOVEMBER 18, 1895.

THE BOTANIC GARDEN.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR : — As Director of the Botanic Garden, I have the honor to present my report for the academic year 1894–95.

The following account by the Head-Gardener, Mr. Robert Cameron, states with sufficient detail, the principal noteworthy facts relative to the weather and its effect on our plants, during the past season; it is here given as a matter of record.

“The autumn weather was exceptionally good, and a large amount of transplanting was done. The usual method of removing young seedlings of hardy herbaceous plants directly to their permanent places in the order beds, was two years ago changed to a practice which has worked well. We now transfer the seedlings to a nursery behind the Herbarium, and tend them carefully during one summer. They are then placed in their respective orders, in the garden proper.

The usual fall frosts held off until the early part of November. By the heavy snowstorm and high wind on November 5th., we lost a large number of our trees and shrubs, while some of the finest specimens in the garden were made unsightly by the breaking of their branches. The consumption of coal through the winter was not above the average. The heavy coating of snow kept our plants in the rockeries and beds in good condition.

For a short time during the early part of the summer we had very little rain, and had to use much water from the city supply; during the last two months of the college year there was enough rain, and the plants grew luxuriantly.”

We have somewhat increased the number of species under cultivation, more especially in the groups of our native plants, but we still keep within the limits suggested by the Overseers' Committee. More space has been given to those species which have distinctly economic relations; because there is apparent in the case of many of our students who are not taking any botanical courses, a wider degree of interest in the so-called useful plants. The plats devoted to these species are attractive to the most unobservant visitor, and justify their increase in size. It is pleasant to note a larger attendance of school children accompanied by their teachers, who make good use of the groups in which characteristic outdoor plants from different countries are exhibited. The narrowness of the walks in our greenhouses forbids the extensive use of our indoor plants by teachers from our public schools. We have a large and well-selected variety

of exotics to illustrate morphology, systematic and economic botany, and, in part, geographical botany, but these are so crowded as to be of far less value for purposes of instruction than if they were spread over twice the area of shelves. If any change of a permanent character is to be made in our range of greenhouses, it would seem best to have them of larger size, but to keep the number of plants in them about where it is now.

In the greenhouses and out of doors, the labelling has been kept up well. The cordial coöperation of the staff at the Herbarium has enabled us to settle some disputed points in regard to the names of a good many of our plants. In the Garden and in the Museum, the system of classification thus far followed is that employed in the *Genera Plantarum* of Bentham and Hooker, and the system of nomenclature is conservative. It has not been thought best to cut loose from the traditions of the Garden, until reasonable assurance of uniformity in nomenclature is at least in sight. Whenever there is a serious attempt on the part of the botanical establishments in this country and abroad with which our Garden and Museum stand in intimate relations, to adopt any scheme by which even approximation to uniformity can be secured, it will receive our support. The proposals which, up to the present time, have been suggested to secure this uniformity, would, it is feared, introduce only greater confusion. This is believed to be especially the case, in the nomenclature of the large number of foreign plants which yield to our Museum their useful products.

Extensive repairs have been made in all the wooden structures at the Garden. It has not been thought advisable to use any of our permanent funds for the construction of iron houses, although this course would probably commend itself to many as cheapest in the long run. Neither has it been thought best to endeavor to obtain from the unrestricted funds at the disposal of the Corporation, any advance for this purpose. Such houses as are needed by the department would cost about \$30,000. The single small iron conservatory which we have now, requires no repairs worth mentioning, but our wooden houses, owing to white ants and the quick decay which comes from heat and moisture, demand a heavy outlay for repairs every two or three years. During the present year the expense of repairing one of our houses proved to be one-sixth of its original cost. The amount now annually expended for repairs on our houses would be much more satisfactorily expended for the support of permanent and larger iron structures. For these iron conservatories we must wait until they come to us by gift.

The Lecture-hall and Laboratory at the Garden have again proved to be of much use to the department. The Summer School of Botany, one of the first established in this country, has been fortunate in having these excellent rooms on the grounds of the Garden, within a few steps of the plants to be studied. For twenty-five years and rather more, classes averaging twenty have carried on their summer studies here under the guidance of University teachers. The instruction has been mostly in the field of morphology and systematic botany, because the large amount of fresh and diversified material at the disposal of the instructors has naturally suggested this direction. So far as requisite plants and instruments are concerned, histological instruction, especially of an elementary character, could be almost as well given anywhere else. But for the study of the forms, adaptations, and relations of herbaceous plants, the Garden affords an ampler supply of excellent material than is at present accessible to students in any of our Eastern states. It seems wise therefore to act on the suggestion made by the instructor for the present year in his report herewith submitted.

"Summer School. — The summer course in Botany was held at the Botanic Garden from July 5 to August 8. It was under the instruction of Mr. Herbert L. Jones and Mr. Frederick O. Grover. The work was but slightly changed from that of the preceding year. Special attention was given to the problems of morphology and to the study of the more difficult orders of the higher plants. It is hoped that the scope of the work may be widened, especially in systematic botany, in order to utilize more fully the abundance of material afforded by the Botanic Garden. The students in attendance were, as hitherto, largely teachers in the secondary schools, but there was an unusually large attendance of those who came merely because of their interest in natural history. The number in attendance was twenty-five, a slight increase over last year."

Besides the laboratories at the Garden, there are five botanical laboratories in full operation at the Museum. The first consists of two large rooms, 12 and 13, on the second floor, in which the elementary elective (Botany 1) is given. These rooms are provided with dissecting lenses, and are under the charge of a senior assistant, who has a staff of ten junior assistants. Each junior assistant has oversight of about twenty-five students, giving to each of them personal attention, and being responsible for the progress of his section. The second large laboratory is on the fifth floor, and is devoted to elective Botany 2. This course has not far from sixty students. Botany 3, treating of histology and vegetable physiology, has an average of twelve students who occupy the communicating rooms, 11 and 12a, in the second story. Botany 4, a course in the morphology of cryp-

togams, taken by about the same number as Botany 3, has a laboratory on the upper floor, where are also the rooms for advanced work in Cryptogamic Botany. The laboratories of Economic Botany are on the first and fourth floors. The equipment of all the laboratories except the last has been provided by generous gifts from Mr. H. H. Hunnewell and the late Frederick L. Ames, and by appropriations from the Corporation. A good deal of the apparatus most in use, must soon be replaced by new appliances. This is especially true of the microscopic objectives employed.

As stated in the last annual report, it was decided, after conference with the Overseers' Committee, to proceed with the work of installing the specimens in the general Museum of Botany. This was determined upon, although it was understood that it would be necessary to expend for permanent fixtures, somewhat more than our assured income and gifts for present use likely to come in during the fiscal year. As a result of this policy, the cases throughout the exhibition rooms have been finished, and are now receiving their specimens. The deep interest expressed by visitors, in the system adopted for the arrangement of specimens goes far to justify the course pursued.

Three rooms are employed for the exhibition of specimens designed to illustrate all the relations of plants. In the main hall, cases are built for the following: (1) illustrations of the relations of plants to water, air, and soil; (2) relations of plants to heat, light, gravitation, etc.; (3) relations of plants to insects, and other animals by which they are benefitted; (4) relations of plants to insects and other organisms by which they are injured, this series closing with the forage plants.

In the large room at the left are displayed the plants which are used by man (1) for shelter and clothing; (2) for food in all countries; (3) for the arts, such as paper-making, tanning, perfumery, dyeing, and the like; (4) for remedial purposes; and (5) the plants which have played an important part in human history, such as papyrus, the sacred plant of the East, etc.

The relations of the plants of the present to the plants of geological times will be shown by fossils and their modern representatives. But by far the most important part of the display is that which exhibits to the public the structural relations of plants to each other. The glass models in the Ware Memorial collection, prepared by the Blaschkas, permit this to be accurately and effectively done.

The collection contains at this date 573 species; in most cases each is accompanied by five or six elaborate models presenting full details

of structure. The 573 species are distributed between 300 genera and 140 orders of flowering and flowerless plants. The specimens have all been made by Leopold and Rudolf Blaschka, of Germany, who have had placed at their command those American species which could be satisfactorily cultivated at their home. They have supplemented this material by the studies carried on by Rudolf, during his journey three years ago, when he visited Jamaica and our Western coast. Early in the spring of the present year, Rudolf undertook another journey for the purpose of studying the plants of our southern border and Mexico. But he had hardly entered on this work when he was recalled by the sudden death of his father. Leopold Blaschka was the founder of the art by which marine invertebrata and plants are faithfully represented, even to the minutest details, in glass of permanent colors, and perfectly true to nature. He prosecuted his studies for us until he was stricken with paralysis, at the close of June. He died on July 3, in his seventy-fourth year. His only son, Rudolf, is the sole possessor of the secrets of this marvellous handiwork. Alone he has resumed his studies in the studio near Dresden, and is conducting unaided the work left by his father. The products of his skill are to be added to those already in the possession of the University. Rudolf Blaschka rightly considers the Ware collection the noblest monument by which his father's name could be perpetuated. He is now devoting himself to the completion of the collection which stands as a double memorial. Mrs. and Miss Ware have entered heartily into the plans by which the memorial can be made most nearly complete. The death of the senior artist will, it is true, much hinder the progress of our original plans, but these plans will be executed by the son as fast as circumstances permit. There is, therefore, good reason to hope that before many years, all the relations of plants will be displayed in our cases in a satisfactory manner. We hope to have botanical sections of the Museum which will be worthy companions of the sections in zoölogy, geology, mineralogy, and so forth, already finished.

Throughout the development of our division, a single aim has been kept constantly in mind, — namely, to carry out in this part of the University Museum the controlling policy of its founder, Louis Agassiz, and of his successor Alexander Agassiz : to render selected series of specimens attractive to the general public ; and to provide in rooms fitted for purposes of investigation all necessary material and appliances. This difficult task would have been hopeless, had it not been for the generous pecuniary assistance which has been freely given by many friends of the department. Even during the academic year

1894-95, there was placed at our disposal for present uses, the sum of \$3000, by a graduate of the College who desires that his name should not be given. Mr. George A. Nickerson contributed for the same purpose the sum of \$1000; while there has been added to the permanent fund, by bequest of Miss Anna C. Lowell, \$5000. For many years before her death, Miss Lowell annually added to the Lowell Fund for a Botanic Garden, \$1000. These, and gifts before acknowledged have enabled us to progress slowly but steadily on the lines of policy referred to, both as regards the Museum and Garden. Provision for the Ware collection has already been made; but we need funds for the further development of the rest of the Botanical Museum. It is the fixed policy of the department not to encroach on our invested funds, unless, as in the case of our outlay for the purchase of room in the section built for mineralogy, our soundest advisers counsel an exception to that policy. The income assured from our present investments, is enough, with strict economy, for the current expenses of the garden proper, but the use of all this income for the Garden leaves our Museum wholly dependent on gifts for present use. Hence we are obliged to proceed much more slowly with the installation of specimens than we could wish, and we therefore venture to state frankly why the development must be gradual.

The Director must again express his sincere thanks to the members of the Overseers' Committee for aid given him in many ways.

GEORGE LINCOLN GOODALE, *Director*.

THE ARNOLD ARBORETUM.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR,—I have the honor to submit the following report on the condition and progress of the Arnold Arboretum during the year ending July 31st, 1895 :

A contract made during the year between the Corporation of Harvard College and the City of Boston has enlarged and improved the Arboretum. Under its provisions the land west of Bussey Street, given up to the Arboretum by the Corporation the previous year, becomes, by legislative authority, the property of the City of Boston, which has leased it back to the Corporation for a period of nine hundred and ninety-nine years, with the exception of that part which is to be occupied by park roads. This contract is similar in its scope and purposes to the contract under which the interests of the University and the public in the Arboretum were first united. The new contract provides for the relocation of Bussey Street, which is now dangerous on account of its heavy grades, through a valley in the Arboretum west of its present position; and for the construction by the City within five years of one and three-tenths miles of park-road in the new territory. It also permits the Park Commissioners of Boston to use for road-building, stone from the quarry in the new extension of the Arboretum, which now becomes the property of the City. A lot of land, about three acres in area, at the corner of Centre and Walter Streets, bought by the City two years before, is leased to the Corporation for nine hundred and ninety-nine years; and two parcels of land within the limits of the old Arboretum, one of about fourteen acres on the top of Bussey Hill, and one of about five acres near the northeast entrance, which were retained by the City for the use of the public when the first contract was made, are now leased to the Corporation for Arboretum purposes. The contract further provides for the construction and maintenance by the City of suitable boundary walls round the Arboretum, and for the policing of the new territory.

The area of the Arboretum thus extended is two hundred and twenty-two and six-tenths acres; and the length of the finished roads is two and one-third miles.

The rearrangement of the shrub collections in beds, begun in the previous year and described in my last report, has been completed. A wide border of trees and shrubs has been planted to form the

eastern boundary of the Arboretum which is here skirted by the City parkway; and about two thousand feet of roadside shrubberies have been established.

The plants in the natural woods, the systematically arranged tree collections and shrubberies, are generally in good condition, although a winter of unusual severity, beginning early in November with a storm which broke the branches of many trees by loading them with ice, followed a season of unusual dryness, and was succeeded by serious early spring droughts.

The interchange of plants and seeds with other horticultural and botanical establishments has been continued during the year. There have been 5292 plants (including grafts and cuttings), and 323 packets of seeds distributed as follows: To the United States and Canada, 4042 plants, and 65 packets of seeds; to Great Britain, 799 plants, and 73 packets of seeds; to Australia, 11 packets of seeds; to Japan, 43 packets of seeds. There have been received during the year 5812 plants (including cuttings and grafts), and 172 packets of seeds.

There have been added to the Herbarium 2208 sheets of dried woody plants during the year. The library has received by gift during the year, 188 bound volumes, and 150 pamphlets. During the year the seventh volume of *The Silva of North America*, prepared in the Arboretum, and 52 numbers of *Garden and Forest*, have been published.

Mr. John G. Jack has given two courses, of fifteen lectures each, in dendrology, attended chiefly by teachers, with an average attendance of thirty-three at the autumn course, and of forty-four at the spring course.

C. S. SARGENT, *Director*.

THE CHEMICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR,—There were no material changes in the courses of instruction offered for the year. Professor Cooke had intended to take a year of rest, and at the time of his death arrangements had already been made for the instruction of his courses. Professor Richards took charge of all advanced students engaged in research in Inorganic Chemistry (Chemistry 20*a*), and gave the course in the History of Chemistry and Chemical Philosophy (Chemistry 8), while Dr. W. D. Bancroft gave instruction in Advanced Inorganic Chemistry and Chemical Physics (Chemistry 6). The omission for the year of the course in Crystallography and the Physics of Crystals (Chemistry 7), and of the prescribed lectures to the Freshman Class had been previously announced.

The number of students in the various courses at the beginning and end of the year and on Jan. 1, 1895, was as follows :—

	Oct. 1, 1894.	Jan. 1, 1895.	June 1, 1895.
Chemistry <i>B</i>	77	72	61
Chemistry 1	218	201	192
Chemistry 3	66	66	62
Chemistry 4	23	24	22
Chemistry 4 <i>a</i>	10	9	9
Chemistry 5	24	22	19
Chemistry 6	13	13	12
Chemistry 20 <i>a</i>	3	3	3
Chemistry 20 <i>b</i>	5	5	5
Chemistry 20 <i>c</i>	3	3	3
Total	442	418	388

It was a difficult matter to provide proper laboratory facilities for so large a number of students, especially for the large class in Descriptive Chemistry (Chemistry 1). In the year 1893-94 the room upon the ground floor, which was formerly used as an organic laboratory, had been occupied by a few students who had been unable to find places in the large laboratory on the third floor. This room was now filled to its utmost capacity, and more than forty men were obliged to take desks in an adjoining room, which had been occupied for seven years by the class in Elementary Chemistry (Chemistry *B*) alone. This arrangement, although the only one which seemed at the time practicable, caused great inconvenience to the instructors and students, and threw upon the janitors a large amount of ad-

ditional labor. The experience of the first month showed that considerable quantities of material must be carried back and forth several times each week in order to avoid confusion and to protect the careless student from the possibility of mistake.

The scientific work of the laboratory was carried on actively throughout the year. Professor Jackson, with F. B. Gallivan, has studied certain derivatives of tribromdinitrobenzol made from unsymmetrical tribrombenzol, and brought to a conclusion the work upon that subject which was begun last year. With G. Oenslager he studied the constitution of phenoquinone, and succeeded in showing that this body was in many ways analogous to the hemiacetals derived from substituted quinones. The study of picrylmalonic ester was continued by him with J. I. Phinney. It was found that this substance occurred in two modifications, and many derivatives of it were prepared. His work with M. H. Ittner consisted in the preparation of a new bromdinitrotolnol and several of its derivatives. Among them were a number of strange, colored compounds similar to one which Victor Meyer is now studying. This work showed that Meyer's preliminary explanation of the constitution of such bodies is inadmissible. With J. H. Moore he studied the action of sodic hydrate on bromdinitrophenylmalonic ester, and obtained a curious product, the nature of which has not yet been fully settled.

Professor Richards continued the revision of the atomic weight of zinc begun by Dr. E. F. Rogers in 1892. A final series of analyses of zincic bromide gave for this constant the value 65.404. The previously accepted values ranged from 65.0 to 65.3. With H. G. Parker he began the study of the atomic weight of magnesium, and the preliminary series of concordant analyses of the chloride gave as a result the number 24.37, essentially identical with the value commonly accepted. He also investigated with Mr. Parker the occlusion of baric chloride by baric sulphate, and discovered the interesting fact that the presence of hydrochloric acid increases this occlusion. He also studied with P. P. Sharples and J. P. Sylvester the occlusion of several metallic sulphates by baric sulphate. N. S. Bacon began under his direction the study of the best conditions for the quantitative separation of magnesium and calcium.

The following work was done under the direction of Professor Hill:—Mr. F. L. Dunlap completed his study of the products formed from mucochloryl chloride and from mucochloric or mucobromic acid by the action of benzol and aluminic chloride. He showed that in any case derivatives of diphenyl crotonic acid were formed. Dr.

E. T. Allen continued his study of the decomposition of pyromucic acid by aqueous bromine, and made a careful investigation of several unsaturated oximes which he obtained. Mr. H. E. Sawyer completed his work upon the conversion of methyl pyromucic acid into the corresponding aldehyd acid and dehydromucic acid. Mr. J. Torrey, Jr., showed that a sodium salt made in this laboratory many years ago by the action of sodic nitrite upon mucobromic acid, the constitution of which had not then been determined, was a derivative of nitromalonic aldehyde. He showed that the free aldehyde decomposed spontaneously and yielded symmetrical trinitrobenzol. With acetone it gave without difficulty a condensation product identical with paranitrophenol.

The following publications have appeared during the year:—

1. A Revision of the Atomic Weight of Strontium. First Paper. The Analysis of Strontic Bromide. By T. W. RICHARDS. *Proc. Am. Acad.* xxx, 369. *Zeitschr. anorg. Chem.* viii, 253.

2. On the Cupriammonium Double Salts. Second Paper. By T. W. RICHARDS and A. H. WHITRIDGE. *Am. Chem. Journ.* xvii, 145.

3. On the Composition of Athenian Pottery. By T. W. RICHARDS. *Am. Chem. Journ.* xvii, 152.

4. Trinitrophenylmalonic ester. By C. L. JACKSON and C. A. SOCH. *Proc. Am. Acad.* xxx, 401.

5. Action of Sodic Alcohulates on Choloranil. Acetals derived from Substituted Quinones. By C. L. JACKSON and H. S. GRINDLEY. *Proc. Am. Acad.* xxx, 409. *Am. Chem. Journ.* xvii, 579.

6. On the Occlusion of Baric Chloride by Baric Sulphate. By T. H. RICHARDS and H. G. PARKER. *Proc. Am. Acad.* xxxi, 67. *Zeitschr. anorg. Chem.* viii, 413.

7. On the Cupriammonium Double Salts. Third paper. By T. W. RICHARDS and G. OENSLAGER. *Proc. Am. Acad.* xxxi, 78. *Zeitschr. anorg. Chem.* viii, 253.

8. On the Cupriammonium Acetobromides. By T. W. RICHARDS and F. C. MOULTON. *Proc. Am. Acad.* xxxi, 87.

9. On the behavior of certain Derivatives of Benzol containing Halogens. By C. L. JACKSON and S. CALVERT. *Proc. Am. Acad.* xxxi, 123.

10. Bromine Derivatives of Metaphenylendiamine. By C. L. JACKSON and S. CALVERT. *Proc. Am. Acad.* xxxi, 136.

11. Ueber einige Derivate des unsymmetrischen Tribrombenzols. By C. L. JACKSON and F. B. GALLIVAN. *Ber. der deutsch. chem. Gesellsch.* xxviii, 190.

12. Ueber die Constitution des Phenochinons. By C. L. JACKSON and G. OENSLAGER. *Ber. der deutsch. chem. Gesellsch.* xxviii, 1614.

13. A revision of the Atomic Weight of Zinc. First Paper. The Analysis of Zincic Bromide. By T. W. RICHARDS and E. F. ROGERS. *Proc. Am. Acad.* xxxi, 000. *Zeitschr. anorg. Chem.* x, 1.

The following table shows the number of students in each of the laboratory courses in chemistry (excluding mineralogy) during the past eight years :—

	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
Chemistry <i>B</i> . .	77	81	44	53	52	54	53	61
Chemistry 1 . .	71	76	96	119	123	129	147	192
Chemistry 3 . .	39	50	38	38	52	33	56	62
Chemistry 4 . .	17	19	18	16	20	17	17	22
Chemistry 4 <i>a</i> . .	6	..	7	6	7	6	4	9
Chemistry 5 . .	9	12	11	13	11	14	12	19
Chemistry 6 . .	2	..	4	10	5	8	9	12
Chemistry 20 <i>a</i> . .	1	..	1	2	1	3	7	3
Chemistry 20 <i>b</i> . .	1	..	..	1	5	4	4	5
Chemistry 20 <i>c</i> . .	3	3	3	3	3	4	6	3
Chemistry 20 <i>d</i> . .	..	3	..	..	1	..	..	..
Total . . .	226	244	222	261	280	272	315	388

The steady increase of our students in number, and the crowded condition of our laboratories, made it evident that additional working room must be provided without delay. Of the original rooms in Boylston Hall no one could well be spared, or had a sufficiently large floor area, except that which takes up the whole western end of the second story, and which was fitted up as a lecture-room in 1890. With our constantly increasing numbers it seemed that this large lecture-room might be needed in the near future for the classes in Descriptive Chemistry, and that the permanent occupation of it for other purposes would be unwise. A large portion of the basement had never been used, and as it was dry and comparatively high, it offered ample opportunity for building a new laboratory. During the summer the brick arches and walls which supported the lower floors on the western end of the building were replaced by steel beams and posts, the windows were enlarged, and the large and light room thus secured was fitted up with hoods and working desks. The new room contains desks for 116 men, and, as each desk is provided with two lockers, 232 students working at different hours find ample accommodation. The laboratory is ventilated through hoods which run the entire length of the room, and are connected with an exhaust fan driven by an electric motor. While sufficient room is thus gained to meet the present needs of our larger classes, the room formerly used for organic work, which has been occupied for two years by students in Descriptive Chemistry, must now be taken as a laboratory for Physical Chemistry in order to provide students in that subject with proper facilities for experimental work. There is little doubt that within a year or two we shall again find ourselves seriously embarrassed by lack of room.

The original ventilation of the various rooms and laboratories in Boylston Hall was carefully planned and proved at first to be wholly adequate. When the roof was raised in 1871 and a third story added, a number of the flues in the eastern end of the building were taken down and carried a long distance horizontally, in order to bring them beneath the new floor. In 1873-74 some of the old hot-air furnaces, the waste heat from which had been used to maintain a draught through the main ventilating shafts, were taken out, and a small steam boiler was put in to heat a portion of the building. In succeeding years the remaining furnaces were torn down and the whole building was heated by steam. The entire system of ventilation as originally planned was thus rendered useless. Attempts had been made to maintain the draught in the ventilating shafts by the introduction of steam coils, but they had not proved successful. While the ventilation has thus for years been far from satisfactory, the overcrowding of our laboratories during the past two years made its defective condition a matter of serious concern. During the summer the whole system of flues was thoroughly overhauled, and exhaust fans driven by electric motors, which were capable of securing ample ventilation, were set in the attic. Fortunately the old flues were, in most cases, straight and large, and the necessary quantity of air could be drawn through them without difficulty. For the large laboratory on the third floor new ducts were carried through the roof. As yet the problem of the supply of fresh air in sufficient quantity has been but partially solved; but in many cases the air ducts from the old hot-air furnaces are still in position, and can be used for this purpose.

In the quantitative laboratory the iron steam baths and an iron hood, which had long ceased to serve any useful purpose, were torn out and replaced by structures of white glazed brick. This change was made in order to secure the perfect cleanliness so indispensable in quantitative work.

HENRY B. HILL, *Director.*

THE JEFFERSON PHYSICAL LABORATORY.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR:—It is interesting to note the increase in the number of students who enter College with a knowledge of experimental Physics. The following table exhibits the main facts:—

	Experimental Physics.	Per Cent.	Descriptive Physics.	Per Cent.
1888	93	30	212	67
1889	149	46	164	50
1890	199	53	158	42
1891	239	62	151	38
1892	264	60	179	40
1893	358	73	135	27
1894	349	69	156	31

Nearly 70 per cent. of the students entering College now take laboratory Physics in the preparatory schools. This gratifying result has been due to Professor Hall, who has devoted incessant labor to simplifying apparatus and methods.

There were during the year 1894-95 six distinct laboratories in the Jefferson Physical Laboratory Building, each with its peculiar set of apparatus. An inventory of the apparatus in each course is kept by the Professor in charge of this course. On account of the growth of the subject of Physics and the multiplicity of mechanical details which relate to the subject, it is a hopeless task for the Director to keep a complete record of apparatus in the Physical Laboratory as a whole. The present necessary division of responsibility solves what has always been a difficult problem,—the proper supervision and care of the physical apparatus. In looking over the records of the University I observed that one of my predecessors, Professor Farrar, on taking office, was put under \$1000 bonds to conserve the physical apparatus, and keep it in as good order as when it was put in his hands. In the careful inventory given to him, one item related to a piece of lead in a drawer and another to a number of different-colored strings.

The number of students who attended the courses in Physics in 1894-95 was close upon 400. Of this number ten were graduate students. Of the graduate students only one, Mr. Duane, was occupied in research work. It is noticeable that graduate students in Physics and Mathematics in this University prefer to take the large amount of systematic instruction which is offered in the graduate

courses, rather than to spend their time in research courses. Students from other colleges feel the need of more systematic training than they have received, before entering the Graduate School.

During the year electrical power was substituted for the previous source of power — a gas engine. Although the latter was economical while in good order, it was found that the repairs upon it and the time and attention it demanded made it more expensive than an electric motor. While the gas engine was rated at seven horse power, it rarely developed more than four, and it was unsuitable for running dynamos for experimental purposes. The repairs on the electric motor were nothing for the year. The machine room and the basement of the Laboratory were also lighted by electricity.

Professor B. O. Peirce was occupied during the College year and during the entire summer vacation in an investigation on the absolute thermal conductivities between 0 C. and 350 C., of various kinds of stone. After much labor a satisfactory method of experimenting was at last found, and the necessary apparatus was constructed, partly with the aid of an appropriation from the Rumford Fund of the American Academy of Arts and Sciences. Though the whole investigation is likely to occupy a long time, certain results have already been obtained. These have been embodied in a paper, written in collaboration with Dr. R. W. Willson, "On the Temperature Variations of the Thermal Conductivities of Marble and Slate," which is to be printed in the December number of the *American Journal of Science*. This investigation has an important bearing upon questions in relation to the heat of the earth. Lord Kelvin has lately published a paper on the same subject. Professor Peirce has also written for the *American Journal of Mathematics* a paper on "Certain Classes of Equipotential Surfaces." Professor Hall is about to publish an account of his investigation on thermal conductivity of metals. His experiments indicate a decrease of conductivity in mild steel with rise of temperature, and the account of his method will be of interest on account of its precision and ease of operation. Professor Sabine has designed many forms of apparatus both for Physics 2, the laboratory course in Light and Heat, and for Physics 4. The importance of accurate instruments in the growing subject of Physics cannot be over-estimated, and much of Professor Sabine's apparatus deserves a wider publicity than it now has.

Mr. C. Stevens, of the Scientific School, was engaged during the year in an investigation on the dielectric constant of paraffine oil. The method he employed was a new one, and the results he obtained

showed a satisfactory agreement between theory and experiment. His paper has not been published; for it is hoped that the method may be extended to the study of other dielectrics. The study of dielectrics, or, in ordinary language, the insulating power of different substances, has become an extremely important one both from the theoretical standpoint and from the practical one. The increasing use of alternating currents in electric lighting demands close study of insulation.

The Director was engaged with Mr. William Duane, an assistant in the laboratory, in the determination of the velocity of electric waves. The result of the work was published in the *American Journal of Science* for October, and also in the *London Philosophical Magazine*. This determination is the first direct one of this velocity, in the sense that both the wave length and the time of oscillation on the same circuit were measured experimentally. It had been supposed hitherto that the time was too short to be measured by photographic processes. The value obtained for the velocity was 3.0024×10^{10} , while the velocity of light is 2.9986×10^{10} . The velocity of the electric waves, therefore, is substantially that of light.

Mr. St. John, the holder of the Tyndall scholarship, spent the year in Berlin. He succeeded in finishing an important investigation in the subject of heat, which is published in the *Annalen der Physik und Chemie*. No. 11, 1895. This investigation is on the light emission power of bodies at high temperatures. Mr. St. John succeeded in obtaining the condition of having a dark body at the temperature of vivid incandescence. This apparently paradoxical result, leads to an accurate method of measurement of the light-giving power of the forms of burners, such as the Welsbach burner, which are coming into general use. It is gratifying to feel that the Tyndall Scholarship is yielding results of the nature contemplated by its distinguished founder.

Mr. Oscar Quick, a graduate student of the University last year, is now an instructor in Physics in the University of Illinois. Professor Shea, the head of the department of that University, one of our graduates, and a former holder of the Tyndall scholarship, has been appointed to the chair of Physics in the Catholic University in Washington.

The subject of Physics may be characterized as that branch of Philosophy to which men look for exact information, and the difficulty of physical investigation can be realized when we reflect that an accurate determination, for instance, of the mechanical equivalent of heat would take all the time of the most competent physicist for

at least a year. A professor of Physics cannot expect, in the present state of development of the subject, to accomplish much in the way of research unless he has skilled assistants to carry out his ideas. Professor Pierce worked during the entire vacation on the investigation I have mentioned. The Director and Mr. Duane were obliged to work night after night on their investigation. If the Director had a competent assistant, whose chief work should be the carrying on of research, the scientific work of the Laboratory could be increased.

JOHN TROWBRIDGE, *Director*.

THE OBSERVATORY.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR,—The fiftieth annual report of the Director of the Observatory is herewith presented. Several dates have been suggested any one of which may be regarded as that on which the Observatory was established. Under an agreement of November 30, 1839, with William C. Bond, the first observation at Cambridge was made by him on December 31, 1839, and he was elected Astronomical Observer on February 12, 1840. The object-glass of the 15-inch equatorial was received at Cambridge on December 4, 1846, and the mounting on June 11, 1847.

The present report seems to be a suitable place for stating briefly the past and present policy of the Observatory. The Statutes of the Observatory were prepared by President Jared Sparks, and are printed in the *Annals*, Volume I, page lix.

Number II states that “the objects of the Observatory are, to furnish accurate and systematic observations of the heavenly bodies for the advancement of Astronomical Science, to co-operate in Geodetical and Nautical Surveys, in Meteorological and Magnetical Investigations, to contribute to the improvement of Tables useful in Navigation, and, in general, to promote the progress of knowledge in Astronomy and the kindred sciences.”

It may fairly be assumed that unrestricted gifts or bequests made to the Observatory were intended for these objects. It is noteworthy that no reference is made in the Statutes to teaching astronomy. Two principles have always been prominent in the policy of the Observatory. First, that it is primarily an institution for research. While a certain amount of teaching has been done, care has always been taken that it should not interfere with the main work of the institution. It has generally been restricted to offering students in astronomy the use of the library and instruments under suitable restrictions, and familiarizing them with the work by employing them as assistants. A second principle maintained, has been the especial advancement of the physical side of astronomy. While precise measures of position have not been neglected, the policy has been rather to undertake such studies of the physical properties of the stars as would not be likely to be made at other observatories. Under the direction of the Bonds, father and son, the large telescope was extensively used in such work: for instance, in laying the foundation of astro-

nomical photography, in the study of the physical appearance of the Sun and planets, of Donati's Comet, of the Great Nebula in Orion and of other nebulae and clusters. Measurements of position are represented by the first precise determinations of the position of faint stars, as those in the Nebula in Orion, and of the northern stars within one degree of the equator. The same policy was continued by Professor Winlock. The physical side of astronomy was represented by his spectroscopic work, by his photographic studies of the Sun, and by the photometric investigations contained in Volume IX of the *Annals*. Meanwhile his interest in measures of precision led to his procuring a meridian circle of the largest size, and taking part in the determination of the positions of the northern stars, by undertaking to observe the zone extending from $+50^\circ$ to $+55^\circ$. Since then the same policy has prevailed. Precedence has been given to physical work, since less attention is paid to such work elsewhere, and certain portions of our resources, as for instance the Henry Draper Memorial, are available only for such work. Accordingly much attention is paid to photography, photometry and spectroscopy. On the other hand much time and money has been spent on measurements of position, and a larger part of the unrestricted income has always been employed in this work than in any other department of the Observatory. The observations of the stars in the zone $+50^\circ$ to $+55^\circ$ mentioned above have been completed, and their publication, with that of the fundamental stars, fills seven volumes of the *Annals* containing together over two thousand quarto pages. Beside this, another zone from -10° to -14° has been more recently undertaken, the observations (except for the doubtful cases) have been completed, and the final reduction will be made as soon as the places of the fundamental stars can be furnished. Other investigations, like the observations of comets when too faint to be observed with small telescopes, and the search for stars having large parallaxes and proper motions, represent in all a large amount of time and money.

In pursuance of the policy named above, the public are not allowed to use the east equatorial, nor do the officers of the Observatory teach directly by lectures or otherwise. Indirectly, however, much instruction is given. Courses are given to women in connection with Radcliffe College, and the first three women to take such courses now hold positions of the first importance at other colleges. Every aid which will not interfere with the regular work of the Observatory is offered to properly qualified students in astronomy who desire to come to Cambridge, even to the extent, when possible, of employing them as assistants. In a word it is the policy of the Observatory to

aid every department of astronomy as much as possible, giving precedence to those subjects which are less likely to be studied elsewhere.

The liberality of the friends of the Observatory has during the last few years greatly increased its opportunities for useful work, both by gifts and bequests. An attempt has been made to secure the greatest possible return in the form of scientific results, and accordingly but little has been spent on expensive fittings and furnishings or upon architectural effect. So many interesting investigations, however, have suggested themselves in recent years that it has become difficult to keep the expenses of the Observatory within its income, without abandoning a portion of the work already in progress. The west wing of the Observatory is now nearly fifty years old and is of wood. It contains the library and much valuable manuscript, the loss of which by fire would be irreparable. For about \$20,000 it could be replaced by a plain brick building about sixty feet long and thirty feet wide which would closely resemble that recently erected to contain our photographic plates. The latter building has proved of the greatest convenience; its cost did not exceed the estimate; and but few changes would be made if it were to be planned again. In a few years a new building for our library and computing rooms will become a necessity. The principal of our funds cannot be used for this purpose. If the sum required is to be saved from the income, the work now in progress must be much restricted. A gift for this purpose is therefore suggested to the friends of the Observatory as a means of greatly aiding our work without an excessive expenditure.

OBSERVATORY INSTRUMENTS.

East Equatorial.—A new form of polarizing photometer has been devised, and attached to this instrument (*Astrophysical Journal*, II, 89) with which any two stars brighter than the fourteenth magnitude and not more than half a degree apart may be compared. The principle is nearly the same as that of the meridian photometer, except that instead of using two objectives, the images of the stars formed by the objective of the large telescope are employed. Under favorable circumstances successive sets of four settings each give average deviations not much exceeding five hundredths of a magnitude. With this instrument 2672 settings have been made on the Algol variable, ζ Herculis, 1634 settings on other stars of the Algol type, and 974 settings on τ Andromedae. With the other polarizing photometers, 27 eclipses of Jupiter's satellites have been observed

photometrically, making the total number 573. Beside these, 2908 measures have been made of variable stars of long period, 672 of β Lyrae and δ Cephei, 872 of γ Cephei, and 1800 of the relative brightness of the components of double stars. 456 estimates of the brightness of variable stars of long period have been made by Argelande's method, mainly when these stars were faint. When they are brighter than the twelfth magnitude they are observed regularly with the West Equatorial, which has an aperture of six inches. 913 observations of more than one hundred variables of long period were obtained with the latter instrument. An attempt is made to follow these objects with the two instruments throughout their variations, observing them at least as often as once a month. The Transit of Mercury which occurred on November 10, 1894, and the occultation of 11 stars during the lunar eclipse of September 3, 1895, were observed with the East Equatorial. Nearly all the observations with this instrument were made by Mr. O. C. Wendell.

Meridian Circle.—The reduction of the observations made with the meridian circle by Professor William A. Rogers continues under his supervision. As stated in the last report, the observations still to be reduced are those made in the years 1880 to 1883 inclusive, and their reduction is proceeding rapidly, as the time of the only assistant employed can now be wholly devoted to this work. The last volume of the zone observations between the declinations $+49^{\circ} 50'$ and $+55^{\circ} 10'$ is in type except about one hundred pages.

The observations of the southern zone, between the declinations $-9^{\circ} 50'$ and $-14^{\circ} 10'$, made by Professor Searle in the years 1888 to 1892 inclusive, continue in course of reduction under his supervision. Early in March, 1895, the reduction had made sufficient progress to allow a short series of observations to be undertaken for the revision of the work, in order to remove uncertainties in some of the observed positions. This series occupied nine evenings during the period from March 11 to April 3 inclusive. The number of observations of fundamental stars was 53; that of circumpolar stars 20; that of zone stars 183. It is expected that a longer series of observations for revision will be begun before the end of 1895.

Meridian Photometer.—Observations have been made with the meridian photometer on 115 nights. The total number of photometric settings is 73,448. All of the observations have been made by the Director. It will be noticed that the number is unusually large, although no measures were made during the three summer months when the Director was absent in Europe. At this rate all the observations on which the Harvard Photometry depends could

have been made in one year. The increased number is mainly due to the increased length of the evening's work, which frequently exceeded four hours. On one evening 322 stars were observed during about six hours. After its completion this series was selected for detailed examination, to see how many stars, if any, were wrongly identified, and what errors might be expected when stars were observed with this degree of rapidity. No material change has been made in the method of observation since the work was begun with this instrument in 1882, except that more material is now collected to determine with certainty the positions of the objects which have been observed. This does not diminish the chances of making an error, but renders its detection more certain. As the series mentioned above was not selected for examination until after its completion, it may be regarded as fairly representing the other work done with this instrument during the last thirteen years. The positions of the objects observed were first determined as derived from the readings of the photometer. It appeared that they differed, on the average, from the positions of the objects intended to be observed by 2' in declination and 4' in right ascension when reduced to the equator. This deviation, small as it is, is mainly due to the motion of the comparison star λ Ursae Minoris, and to other similar causes which in no way affect the proof of the correct identification of the star, but only the position in the field in which the stars are measured. As the diameter of the field is about 45', the stars must in general have been brought not only into the field but must have been placed very near its centre. In 15 cases where the deviation was largest, a special examination was made for adjacent stars which might have been observed by mistake, and in every case it appeared that the object intended was that actually observed. In the case of 28 stars in this series the position of one or more adjacent stars had already been noted during previous observations of these objects and the observer's attention was called to them; and in 35 cases the identity of the object observed was rendered certain by noting on this evening the position of adjacent stars. In conclusion, it appears that of the 322 objects observed, an error of identification does not occur in a single instance. It therefore appears extremely improbable that the catalogues made with the meridian photometer are sensibly affected by errors of identification. An examination was next made of the average deviation of the results of these observations from those derived from all the observations of the same stars. In 226 cases the observations were completed, and it appears that the average deviation of the results expressed in magnitudes was

± 0.098 . The positive sign prevailed, showing that the stars in this series were observed on the average about one-sixteenth of a magnitude too faint. Applying a correction for this, the average deviation is reduced to ± 0.073 . A careful watch is always kept for clouds, the observer looking for them from an adjacent balcony every ten minutes to assure himself that none are present, and after each star observed when clouds are approaching the meridian. During the series mentioned above, clouds were looked for 30 times.

Another test was made to see if the accuracy of the individual settings could be materially increased by making them more deliberately. From the average results of three evenings it appeared that the average deviation of single settings was ± 0.12 when nine seconds was spent upon each setting. This is about the usual time occupied in regular observations. A similar determination was made when the average time of each setting was twenty-nine seconds, the observer attempting to make the most accurate settings possible. The average deviation of the results, however, was found to be ± 0.12 , or exactly the same as before. Each star is observed on at least two evenings, four settings being made each evening. If the average error of the final result is ± 0.10 , it follows that it would only be reduced to ± 0.09 if the errors of setting could be reduced to zero. When greater accuracy is required, the error in the final result is much better reduced by the policy hitherto adopted of increasing the number of evenings on which each star is observed rather than devoting more time to each setting. This is because the real errors to be apprehended are those due to unequal transparency of different portions of our atmosphere, and to similar causes which can only be counteracted by increasing the number of nights on which each star is observed.

The revision of the stars in the Harvard Photometry has been completed, and the observations are now in form for publication except for any correction which it may be desirable to apply to the individual series. The observation of all the stars of the magnitude 7.5 and brighter and in declination between -40° and $+20^\circ$ have also in general been completed, except between 14 and 20 hours of right ascension.

A comparison has been made of the magnitudes of the series of 100 standard stars as derived from the first of these catalogues with their corresponding magnitudes as given in the Harvard Photometry, and in Volume XXIII of the Annals. From this it appears that the results differ in the three catalogues from their mean, by ± 0.035 , ± 0.026 and ± 0.023 , and that the greatest differences for any one star are

0.14, 0.11 and 0.13 respectively. No systematic differences dependent on magnitude exceeding three one hundredths of a magnitude are perceptible for stars from the second to the sixth magnitude. Since the mean epochs of the three catalogues are 1881, 1885 and 1893, an unexpected permanency both in the instruments and in the brightness of the stars themselves is thus indicated.

HENRY DRAPER MEMORIAL.

The number of photographs taken with the 8-inch Draper telescope is 2056. The number taken in Peru with the 8-inch Bache telescope is 2469. With these two instruments an attempt is made to obtain photographic charts of the entire sky from the north to the south pole at least once every year, showing all stars brighter than the thirteenth magnitude. Only about four hundred plates are required, with exposures of ten minutes. All of the spectra photographed with these instruments have been examined as usual by Mrs. Fleming. As a result a large number of objects having peculiar spectra have been detected. Among them are 20 new variable stars which have been found from the presence of bright hydrogen lines in their spectra, and confirmed by an examination of the photographic charts of the same regions. Five stars have been found whose spectra are of the fourth type, three of the fifth type, three new gaseous nebulae, two stars in which the hydrogen line $H\beta$ is bright and three in which the spectra are peculiar. A well marked meteor trail appeared on one of the plates. Besides these, two new variable stars have been found by Miss L. D. Wells and one by Miss E. F. Leland. The latter star is of interest because its period appears to be much longer than that of any other variable star hitherto discovered. The hydrogen lines have been shown to be bright in the photographic spectra of the known variables, S Cassiopeiae, R Arietis, R Persei and T Hydrae, while the spectrum of T Camelopardali is of the fourth type.

The number of photographs taken with the 11-inch Draper telescope is 251. They include 50 images of the spectrum of β Aurigae, 30 of them showing the lines double. The lines are double in 25 out of 160 photographs of the spectrum of ζ Ursae Majoris. The latter star was photographed nearly every clear night, since the law determining the time at which the lines are double has not yet been discovered. An attachment has been made to this telescope by which it can be moved in declination about $25''$ at intervals of exactly one minute, and double this amount every ten minutes. Photographs have thus been obtained, showing the variations from minute to minute of U

Cephei and other stars of the Algol type. A similar arrangement has permitted photographs to be taken of the satellites of Jupiter while undergoing eclipse. Professor Edwin B. Frost of Dartmouth College has expressed an interest in the spectrum of β Lyrae, and has kindly undertaken the study of our photographs of this object, all of which, to the number of 107, have been lent him. This example suggests the possibility of greatly increasing the usefulness of all the photographs taken here. We should be glad to lend in the same way many more of our photographs, if we could place them in equally efficient hands. Many astronomers are so situated that they could discuss photographs which they have not the opportunity of taking themselves. This applies with especial force to photographs of objects in the southern sky. Many of these photographs we already have and others could be taken as required. We could thus place in the hands of astronomers material which they could otherwise obtain only by large expenditures of time and money. As examples of such work may be mentioned positions, distribution and brightness of stars in clusters, distribution of light in spectra, peculiar spectra, eclipses of Jupiter's satellites, and lunar mountains. Correspondence is invited with any astronomers who would like to take up such investigations. Our collection of photographs affords a means of determining with certainty, the variability of stars in any part of the sky. Several astronomers have availed themselves of these facilities to determine the variation, if any, of suspected objects.

BOYDEN DEPARTMENT.

The political troubles in Peru at one time seriously endangered the Boyden Station. While the better classes in all parties would doubtless offer every protection, there is always danger from a lawless soldiery. Professor Bailey and his family were in a train which was captured near Mollendo, and at the time Arequipa was taken, there was much firing within hearing of the station. While the government would doubtless make good any pecuniary loss which might be sustained, it is much to be desired that nothing should occur to mar the friendly feelings to the Observatory now shown by all classes of Peruvians. These feelings were doubtless much strengthened by the friendly visit of President Pierola to the Arequipa station last April.

The number of photographs taken with the 13-inch Boyden telescope is 1205. Some of these represent the spectra of the brighter stars, some are designed to determine the parallaxes of various peculiar objects, and some furnish excellent charts of the principal

clusters both in the northern and southern heavens. An examination of the latter by Professor Bailey has led to the interesting result, that large numbers of variable stars occur in certain star clusters while few, if any, have been found from a similar examination of other clusters. Forty-six variable stars have been found in the cluster N. G. C. 5904 and eighty-seven in the cluster N. G. C. 5272.

The great need of the station is a telescope of large size and an observer who can devote his time exclusively to visual observations. The opportunities for useful work are exceptionally great: first, on account of the almost unrivalled atmospheric conditions; and secondly, owing to the comparatively little attention hitherto paid to the southern stars. No large refracting telescope has ever been used in the southern hemisphere, or even south of latitude 35° north.

A line of meteorological stations established by this Observatory is now in operation from the coast across the Andes to the valley of the Amazon. They include Mollendo (altitude 100), La Joya (4150), Arequipa (8060), Alto de los Huesos (13,300), Mt. Blanc Station on the Misti (15,600), El Misti (19,200), Cuzco (11,000) and Santa Ana (3,000).

THE BRUCE PHOTOGRAPHIC TELESCOPE.

A clause was inserted in the contract for the Bruce telescope to the effect that the final payment shall be made when the instrument is mounted at the Observatory and gives as good star charts as the parties of the first part (Messrs. Alvan Clark & Sons) can effect. Accordingly the final payment was made last spring, on the assurance of Mr. Clark that the last of these conditions had been fulfilled. Professor Bailey came to Cambridge last summer to superintend the removal of the Bruce telescope to Peru, but unfortunately he was recalled suddenly by illness in his family. He was able, however, to spend much time on the instrument and obtained results which lead to the belief that satisfactory photographs will eventually be obtained. The principal changes required are a better driving clock, and one in which the intervals at which it is controlled are shorter, a stiffer fork carrying the telescope, and better illumination for the wires. A second prism has been constructed for the Bruce telescope. It is of crown glass and has a small angle so that the dispersion is small. It is expected that stars having peculiar spectra can thus be detected even if they are extremely faint.

As stated in previous reports, a large piece of work is in progress to determine the photographic brightness of the stars

upon a uniform scale. This work consists of three parts: First, 334 plates have been taken with the transit photometer. A duplicate instrument has been constructed with which similar photographs may be taken at Arequipa. Secondly, 281 plates have been taken, on which the images of the stars are out of focus, so that they may be measured as surfaces instead of points. On 63 of these plates 5102 stars have been identified. The brightness of 690 stars has been measured on seven plates. Thirdly, 108 plates have been taken, on which 2700 stars of about the tenth magnitude, and 3941 brighter stars for comparison, have been selected and measured, one in each square degree.

MISCELLANEOUS.

Library.—The library of the Observatory has been increased during the year by the addition of 293 volumes and 1189 pamphlets. Moreover, 106 volumes and 424 pamphlets, mostly relating to meteorology, have been deposited in it by the Library of Harvard College. Not including the latter, the total numbers of volumes and pamphlets in the library of the Observatory on October 1, 1895, were therefore 8109 and 11,602 respectively.

As the station at Arequipa, Peru, will be maintained permanently, it is desirable, owing to its remoteness, that it should have a library of its own. Copies of astronomical and meteorological works sent there direct, or through this Observatory, will be gratefully received and will prove of much value.

Telegraphic Announcements.—The distribution of telegraphic announcements of discovery has been continued as in past years. Astronomers are requested to continue to send to this Observatory announcements of their discoveries for transmission to the observatories of Europe and America.

Buildings and Grounds.—The widening of Concord Avenue, which was still under discussion at the time of the last report, is not now apprehended, as the project, fortunately for the Observatory, has been abandoned. Electric cars have been substituted for horse-cars upon that Avenue, but observations upon the collimators of the meridian circle, made during the passage of the cars, show that they have no noticeable effect in disturbing the pier.

Exhibition of Photographs.—A part of the photographs exhibited at Chicago and afterwards at San Francisco, as stated in former

reports, were sent this year to a photographic exhibition conducted by the Imperial Institute of London. Another portion of the photographic collection has more recently been sent to Atlanta, Georgia, to be shown at the exhibition now in progress there.

Publications.—The printing of Volume XXXII, Part I, of the Annals of the Observatory, containing a discussion of photographic and visual observations by Professor W. H. Pickering was completed and the volume was distributed early in the year. Volume XXXIV, containing observations by Professor Bailey of the brightness of 7922 southern stars, is wholly in type. Volume XXXVI which will complete the journal of the zone observations made by Professor Rogers, is in course of publication, and 199 pages have been printed, while about 100 pages still remain. Volume XL, Part IV, containing the Blue Hill Meteorological Observations for 1894, is largely in type. Volume XLI, Part III, containing a summary of observations made by the New England Weather Service in 1893, is in progress.

The preparation for the press of Volume XXVI, Part II, has made much progress, and that of Volume XXX, Part IV, is complete. The first relates to the work of the Draper Memorial, and the second to the study of the clouds at the Blue Hill Observatory.

A plate representing the Harvard College Station at Arequipa, with explanatory text, appeared in the American Meteorological Journal, XI, 146; and an account of the meteorograph intended for the station on the summit of El Misti, by its constructor, Mr. S. P. Fergusson, appeared in the same Journal, XII, 116.

The following publications have also appeared during the year:—

Forty-ninth Annual Report of the Director of the Astronomical Observatory of Harvard College. Cambridge, 1894.

Observations of β Persei with the Meridian Circle of Harvard College Observatory. By A. Searle. *Astronomical Journal*, xv, 54.

On the Forms of the Disks of Jupiter's Satellites. By S. I. Bailey. *Astrophysical Journal*, ii, 97.

The Harvard College Meteorological Stations in Peru. By S. I. Bailey. *American Meteorological Journal*, xi, 76.

Stars having Peculiar Spectra. By M. Fleming. *Astronomische Nachrichten*, cxxxvii, 71.

Stars having Peculiar Spectra. Eleven New Variable Stars. By M. Fleming. *Ibid.* cxxxviii. 175. *Astrophysical Journal*, i, 411.

Photographic Observations of Eclipses of Jupiter's Satellites. By Willard P. Gerrish. *Ibid.* i, 146.

Comparison of Photometric Magnitudes of the Stars. By E. C. Pickering. *Astronomische Nachrichten*, cxxxvii, 65.

Observations of the Transit of Mercury, 1894, Nov. 10. By E. C. Pickering. *Ibid.* cxxxvii, 69.

Discovery of Variable Stars from their Photographic Spectra. By E. C. Pickering. *Astrophysical Journal*, i, 27.

Comparison of Photometric Magnitudes of the Stars. By E. C. Pickering. *Ibid.* i, 154.

T Andromedae. By E. C. Pickering. *Ibid.* i, 305.

Eclipse of Jupiter's Fourth Satellite, February 19, 1895. By E. C. Pickering. *Ibid.* i, 309.

A New Form of Stellar Photometer. By E. C. Pickering. *Ibid.* ii, 89.

EDWARD C. PICKERING, *Director.*

THE MUSEUM OF COMPARATIVE ZOÖLOGY.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

During the past year the usual courses of instruction have been given at the Museum in the Natural History Laboratories. Those in zoölogy were given by Professor Mark, and Drs. Slade, Davenport, and Parker, assisted in the laboratory work by Messrs. H. V. Neal, H. S. Jennings, W. B. Cannon, and S. K. Fenollosa. Dr. W. McM. Woodworth has, as in previous years, taken charge of the laboratory work, and has given some lectures in the course on Microscopical Anatomy.

Professors Whitney, Shaler, Davis, and Wolff gave courses of instruction in Geology, Palaeontology, Physical Geography, Meteorology, and Petrography. The assistants in these departments were Messrs. R. T. Jackson, J. B. Woodworth, R. E. Dodge, L. S. Griswold, R. DeC. Ward, and C. L. Whittle. The courses in Mining Geology and allied subjects were given by Mr. H. L. Smyth. The valuable library of Professor Pumpelly, which he deposited in the library of the mineralogical section, has been accessible to the students of the Geological Department.

The Newport Marine Laboratory has, as usual, been open to advanced students in Zoölogy. Thirteen students spent a part of their time in the Laboratory collecting material for their special investigations, which they will continue and prepare for publication at the Museum. It is unfortunate that there is not in constant attendance at the Laboratory some one thoroughly familiar with the marine fauna of our coast, who could devote more time to the interests of the students than I am able to give.

Dr. W. McM. Woodworth continued his photographic experiments with great success during the past summer. Our apparatus has been modified and greatly improved. A great part of the time was occupied in taking photographs of some of the larger pelagic animals.

We have to thank the late Colonel Marshall McDonald, United States Fish Commissioner, for the facilities granted to our students in connection with their work at the Fish Commission Station at Wood's Hole.

The income of the Virginia Barret Gibbs Scholarship was used according to the terms of the gift.

The Faculty of the Museum nominated as occupants of the Naples Table for parts of the year 1894-95, Professor W. E. Ritter, of the University of California, Professor Reighard, of the University of Michigan, and Professor C. E. Nutting, of the State University of Iowa.

It may be useful to lay before the Corporation my observations on some of the marine biological laboratories, as they may assist in shaping the course of the University, when the time comes, either in favor of establishing a station entirely under the control of Harvard University, or in connection with the United States Fish Commission, or in favor of uniting with other universities in maintaining a station on the principles which control the Classical Schools at Athens and Rome.

During the past winter, I visited the zoölogical stations at Naples, Trieste, Ville Franche, Marseilles, Banyuls sur Mer, and Plymouth. With the exception of the stations at Naples and at Plymouth, they are connected with educational institutions, holding to them much the same relations which a chemical, physical, or other laboratory holds. These stations are either managed by a member of the natural history staff, or are under the control of a Professor from the institution with which they are connected. The investigations carried on at these stations are usually published in the serials issued by the natural history departments of their respective universities. The teaching staff avail themselves of the facilities offered by the stations to obtain fresh material throughout the year for the use of students during term time.

The organization at Plymouth is different. It depends for its support upon a large number of persons who are interested in the promotion of marine investigations. It is in charge of a Director, and is managed by a Board of Trustees. The station publishes a Bulletin giving an account of the work accomplished there.

The organization at Naples is still different. Dr. Dohrn, the enthusiastic founder and Director of the Station, receives the support of a number of European governments, who pay an annual subsidy for the use of tables at the rate of £100 a year; and in addition he receives a grant from the German government. This enables him to keep a permanent staff of trained assistants, who carry on a zoölogical observatory. Their investigations are published in Monographs and Bulletins, the cost of which is defrayed in part from their sale, in part from the fees and subsidies paid for the occupation of the thirty-five tables available at Naples, and in part by the Director. The special work of the occupants of the tables is also frequently published at the cost of the station.

A fine aquarium is maintained at Naples, to which a small entrance fee is charged. At Marseilles, Plymouth, and Banyuls, smaller aquaria are also open to the public. At Banyuls and at Naples small steam vessels are owned by the stations, and are employed in collecting material and in making dredging expeditions at moderate depths. At the other stations steamers and boats are hired when needed.

It is evident that the status of these two types of stations is very different. In the one, the work of the university biological laboratories may be said to continue under the same influences as at the university. In the other, governments and universities combine to support and foster more extended investigations in natural history than a single institution can be expected to maintain. How far it is the province of a university to assist in carrying on, outside of its own gates, the investigations of others than its students, is a financial question which need not be discussed. While it is eminently proper for governments to promote the interests of such a station as Naples, it remains to be seen how long it will be possible to interest various universities in any institution in the management of which they have no influence.

The stations at Banyuls and at Roscoff owe their origin and principal support to Professor H. de Lacaze-Duthiers. The stations receive but a small subvention from the Sorbonne, the equipment and the greater part of the running expenses being provided by Professor Lacaze-Duthiers and his friends. Instruction is carried on at both his marine laboratories as it would be at the Sorbonne, and he is assisted during a great part of the year by a large staff of temporary Professors from every part of France. The results of the investigations carried on under his supervision are published in the *Archives de Zoologie Expérimentale*, also founded by Lacaze-Duthiers. There is only a nominal fee to be paid for admission to these laboratories, which attract students from all parts of the world.

Similarly at Trieste, Ville Franche, and Marseilles, students are practically admitted free of cost from Austrian, Russian, and French universities. Foreigners can readily gain admittance to these laboratories on the most liberal terms. The Marseilles Station at Endoume has the immense advantage of being within a short distance of the University, and is in fact one of its biological laboratories. The work done at Trieste is published under the auspices of Professor Claus in the *Arbeiten aus dem Zoologischen Institute der Universität*, and a special appropriation is made by the city of Marseilles for the publication of the Annals of the Laboratory.

The cost of maintaining three or four students at the Naples Station is a serious expenditure for any university, and is out of proportion to the expenses incurred for them in other departments, that cost being made up of many things in which a distant educational institution can only have an indirect interest. The cost of a table at Plymouth, or in this country at Wood's Hole, is very much less than at Naples.

In so far as Harvard University is concerned, the annual expenditures of the Newport Marine Laboratory, including those of the steam launch and the transportation of the students to and from Newport, if distributed among the tables in use by the students and by myself and my assistants, amount to somewhat less than the expense for the same number of tables at the Wood's Hole Marine Biological Laboratory with similar facilities. The results of the work done at the Newport Marine Laboratory have thus far been published in the Bulletins of the Museum.

It is true that the expense of an independent station for each prominent university would in this country be very large, and that an American marine biological laboratory supported by the joint contributions of the principal universities would be in the line of economy. But as soon as a single institution of that kind increased in size and attempted to grant facilities for more or less elementary instruction as well as for advanced work, the joint laboratory would become a cumbersome machine difficult of management. Duplication in all directions would soon become necessary, and the advantages of a compact and easily controlled laboratory would be lost.

Were it possible for each university to use its resources in connection with the facilities for advanced work available at the Laboratory of the Fish Commission at Wood's Hole, a maximum amount of original work might be expected. For no university laboratory can hope to obtain the facilities accruing from the maintenance of the fleet of small boats, and steamers, and of the personnel which forms a necessary part of the equipment of the Fish Commission Station. Such an alliance, however, could only be formed provided an equitable agreement satisfactory to the Fish Commission could be made. This would enable the universities to foster original work only, and not to expend, as they do now, their resources or the time of their instructors in elementary work.

The mere collecting of material for ordinary investigation at a marine station is not expensive, but it is expensive to carry on the continuous observations of eminent specialists, and subsequently to publish their investigations. Such observations could well be carried

on in connection with the work of a Government Fish Commission, and are not only germane to its investigations, but all-important to their success. Still more expensive is it to settle the many problems in thalassography which have arisen in consequence of the more recent deep-sea explorations, —problems which require for their solution the use of steamers thoroughly equipped for their task. This can be most successfully accomplished either by special explorations; or, more naturally, in the course of time in connection with the problems of a Fish Commission.

The number of visitors to the Museum Exhibition Rooms continues to increase, the attendance on Sundays specially having become most gratifying. This marked increase is no doubt owing in part to the opening of the Botanical and Mineralogical Museums, and in part to the fact that the Museum is open daily nearly the whole day, and not merely at specified times during the week. It would greatly add to the usefulness of the collection to the public, were the Museum able to appoint guides who would at certain times pass through the exhibition rooms and explain the more interesting features of the collection to a limited number of visitors. This is accomplished to a certain extent for school children who visit the Museum with their teachers.

We are greatly indebted to Professor Hyatt for the care he has given to the collection of Invertebrate Fossils under his charge; he has spent considerable time in picking out additional Cephalopods, which have been placed on exhibition with the Systematic Collection of Mollusks. Mr. R. T. Jackson has also taken great interest in this collection, and we owe to him the acquisition of many interesting fossils filling gaps in our stores, as well as thanks for the time he has spent in arranging certain parts of the collection of Fossil Invertebrates.

Mr. Brewster has, as in former years, kindly supervised the care of the collection of Birds and Mammals.

To Mr. Faxon has fallen the general supervision of the Museum collections, and much of the routine work of the establishment. During the past year he has been mainly engaged in the revision of the collection of Mollusks, and in the printing of his monograph on the Crustacea of the "Albatross" Expedition of 1891.

Mr. Garman reports that the alcoholic collections of Reptiles and Fishes are in unusually good condition, and the same is the case with the alcoholic collections of Invertebrates.

Mr. Henshaw also states that the Entomological collections are in excellent condition, and that their use and that of the Entomological Library is constantly increasing.

Since last January, Dr. C. R. Eastman has been placed in charge of our collection of Fossil Vertebrates. Since the death of Dr. G. A. Maack, in 1871, it had received no attention. The immense accessions made since that time by purchase or by expeditions were merely unpacked and laid away in trays, often in the original wrappers. With the exception of the examination of some of the mammalian remains by Professors Scott and Osborne, nothing of value had been done. Dr. Eastman has now made a general revision of this collection, arranging the material systematically. We can therefore form some idea of what our desiderata are to make the collection what it should be, a representative one both faunally and systematically. A great mass of valuable material will soon be available for exhibition, and we hope to lay aside for the Fossil Faunal Rooms such types as properly belong on exhibition. To give an idea of our Fossil Vertebrate collection, Dr. Eastman has prepared a chronological list of the collections which have at various times become the property of the Museum.

Dr. W. McM. Woodworth, who has had charge of the collection of Worms during the greater part of the past year, has prepared a number of exquisitely mounted specimens, which have been placed in the exhibition rooms. He has devoted considerable time to making these preparations, and to obtaining additional material for the same purpose.

All attempts at placing any collections either in the Geographical or Geological Exhibition Rooms have been given up. One of the rooms is now occupied by the Ornithological Department, and in the other, which leads to the Botanical Exhibition Rooms, we expect to place such collections as will interest both the zoölogist and botanist.

It is hoped that the Geological and Geographical Exhibition Rooms will eventually be arranged in the southwest corner-piece, which is to adjoin the Mineralogical collections. The time must soon come when the Geological and Geographical Departments will find their quarters in that section of the University Museum.

Mr. W. E. D. Scott succeeded, during the past year, in interesting a number of gentlemen* in his plans for placing on exhibition a

*	
O. Ames, 2d	\$100
Charles C. Beaman	100
W. S. Bigelow,	100
W. L. Bryant	100
Walter G. Chase	300
W. H. Forbes	50
L. C. Fenno	50
George A. Goddard	50
Joel Goldthwait	500
A. Hemenway	50
J. J. Higginson	50
R. C. Hooper	50
A. A. Lawrence	50
Samuel C. Lawrence	50

selected series of birds, artistically mounted and isolated, so that each small case should illustrate some point of interest in ornithology. The sum of \$1690 has been expended on this exhibit.

One of the exhibition rooms connecting the Zoölogical with the Botanical Department was assigned to Mr. Scott, and a short time before Commencement the room was open to the public. It contained about fifty cases of exquisitely mounted birds, which will greatly interest the public, and will add immensely to the value of our ornithological collection. The birds all formed part of Mr. Scott's collection of North American Birds, which he has presented to the Museum. In addition to these, Mr. Scott has also assigned to the Museum his collection of West Indian Birds. The whole consists of over 3000 specimens, 1500 North American, and 1600 West Indian Birds, and is an invaluable addition to the Ornithological Department of the Museum. It is to be hoped that the exhibition of this unique collection will interest the friends of ornithology, and lead to some sufficient provision for the full development of Mr. Scott's plan. This embraces a local New England collection, a North American collection, a Western Hemisphere collection, and ultimately a fairly representative general collection, each of which Mr. Scott hopes to illustrate, according to the plan pursued in the collection now on exhibition.

The Library has received either in exchange or by gift and purchase the usual number of accessions. The number of volumes is now nearly twenty-five thousand.

A complete list of the publications of the Museum during the past year is subjoined. The amount of our publications has been exceptionally large, owing to the number of reports of the "Albatross" Expedition of 1891, as well as the reports on my expeditions to the Bermudas and Bahamas and Cuba on the "Wild Duck," forming Volume XXVI of the Bulletin (282 pp. and 77 plates). Connected with the latter we have published as the last number of Volume XVI of the Bulletin, which had remained uncompleted for many years, a Report by Professor R. T. Hill of the United States Geological Survey on his exploration of the island of Cuba. We have also issued

Augustus Lowell	\$100	Dudley L. Pickman	100
Wm. Minot	100	Mrs. W. D. Pickman	100
Geo. Mixer	100	S. D. Warren	25
H. Milliken	100	Chas. G. Wild	100
Richard Morgan	10	S. M. Wild	50
Geo. A. Nickerson	50	A friend	25
A. B. Otis	10	A friend	10
Dr. E. D. Peters Jr.	50	A friend	10

the first number of the third volume of the Geological Series, Volume XXVIII, No. 1. The principal reports relating to the "Albatross" are the memoir on the Holothurians by Professor H. Ludwig of Bonn, containing a number of colored figures of abyssal Holothuroidea (183 pp. and 19 plates), and the memoir on the Crustacea by Mr. Faxon, with ten colored plates of deep-sea types (Vol. XVII, pp. 292, 67 plates and 1 chart). In the Bulletin have appeared the reports of Dr. Ortman on the Schizopods, of Dr. Bergh on the Opisthobranchs, of Dr. Giesbrecht on the Copepods, of Dr. Hartlaub on the Comatulæ, and of Mr. Townsend on the Birds of Cocos Island and Mapelo, and of Dr. Dall and Mr. A. G. Mayer on some of the collections made by the "Wild Duck."

The Corporation made the Zoölogical Department a grant of \$400 to aid in the publication of some of the contributions from the Zoölogical Laboratory, which either have appeared in Volume XXVII of the Bulletin, or are in the hands of the printer.

The memoir by Mr. Garman on the Cyprinodonts (180 pp. and 12 plates), mentioned in the last report, has also been published.

These different publications comprise one volume and eleven numbers of the Bulletin, and one volume and two numbers of the Memoirs.

The plates for Professor Milne-Edwards and Bouvier's Memoir on the Galathoidæ have been completed, and as soon as they have been revised by the authors their monograph can be sent to the printer.

The plates to accompany Dr. Goës's memoir on the Foraminifera of the "Albatross" Expedition of 1891 are in his hands for revision, and the text has been sent to the printer. Dr. Müller's report on the Ostracods is in the hands of the binder.

Excellent progress is making with the monograph of Messrs. Wachsmuth and Springer on the Crinoidea Camerata of North America. Over 300 pages have been cast, and 50 plates have been printed.

Mr. Garman is making good progress with his memoir on the Deep-Sea Fishes of the "Albatross" Expedition of 1891. About 20 plates have been finished. I have myself prepared the greater part of my report on the Echini of the same expedition. It will be illustrated by at least 26 plates, which will be taken in hand by Mr. Westergren as soon as the plates for the fishes are out of his hands. Dr. Mark reports that he has made fair progress with his monograph of the remarkable deep-water Cerianthoid procured by the "Albatross."

I have also received the manuscript of the report of Dr. Otto Maas on the Acalephs of the "Albatross" Expedition of 1891, to be accompanied by 15 plates which are now in the hands of Messrs. Werner and Winter.

Professor Goode writes me that the report on the Deep-Sea Fishes of the Western Atlantic by himself and Dr. Bean, which contains the "Blake" collection of Fishes, is in the hands of the printer.

In connection with my investigations on the Coral Reefs of the West Indies, and of the "Albatross" Expedition of 1891, Professor R. T. Hill of the United States Geological Survey has, with the consent of the Director, made an extended exploration of the Isthmus of Panama, with a view of determining so far as is practicable the period at which the Isthmus of Panama was elevated, and when the connection which once existed between the Gulf of Panama and the Caribbean Sea ceased to exist. He was greatly assisted in this exploration from the interest taken in the subject by Colonel Rives, the Superintendent of the Panama Railroad, to whom, as well as to the President of the road, we are greatly indebted for various favors connected with his expedition. Professor Hill made an extensive collection of rocks and fossils, and is now preparing a preliminary report on the results.

During the past winter I spent a couple of weeks along the Florida Keys on a sea-going tug to re-examine them in the light of the experience I had gained in the study of the Bahama and Cuban reefs and of the Bermudas. A preliminary note on the results was published in the *American Journal of Science*, from a letter written to the late Professor J. D. Dana. I was fortunate enough to obtain, thanks to the kind offices of Mr. Peter A. Williams of Key West, samples taken at every 25 feet of the core of an artesian well driven on Key West Island from the surface to a depth of 2000 feet. These samples have been placed for examination in the hands of Mr. E. O. Hovey and Mr. George H. Eldridge, of the U. S. Geological Survey, and I hope to add to my own report of this last exploration of the Florida Keys, the results obtained by Messrs. Hovey and Eldridge. The Director of the U. S. Geological Survey has kindly consented to have an analysis made of the samples obtained, and Mr. Eldridge hopes to make a comparison of the core of the Key West well with those of Lake Worth, St. Augustine, and Tallahassee. It is thought that this examination may give us accurate results regarding the thickness of the Florida reef, and the nature and age of the rocks upon which it rests.

In connection with the various expeditions undertaken by the Museum, I have to thank Commander C. D. Sigsbee, U. S. Hydrographer, and Colonel Duffield, the Superintendent of the U. S. Coast Survey, for assistance and suggestions.

Among the collections received I may mention that of the Deep-Sea Fishes made by the "Blake," which had been in the hands of Professor Goode and Dr. Bean while they were preparing their memoir on the Deep-Sea Fish Fauna of the Western Atlantic, now in press. Dr. Goës has also sent back the Foraminifera of the "Albatross" Expedition of 1891, and the material from the Caribbean Sea belonging to the Coast Survey and the Fish Commission, which had been sent him for comparison, has been returned to the Smithsonian (with a named collection of types) and to the Coast Survey.

We have received from the Smithsonian a series of types of Deep-Sea Fishes collected at various times by the "Albatross;" a collection of Fresh-water Fishes from Tennessee, Kentucky, and Texas; also a collection of Sponges from Alaska, collected by Dr. Dall, and identified by Mr. Lawrence M. Lambe of the Canadian Geological Survey. The National Museum has sent us a set of the more interesting deep-sea types from the collection of Holothurians returned by Dr. Ludwig.

We have as usual filled a few gaps in our collections by purchases from Professor H. A. Ward and from Rowland Ward & Co. A small collection of Pteropods has been obtained from Mr. Sowerby.

Thanks to the kindness of the authorities of the British Museum, we have been able to secure a large collection of casts representing types, the originals of which we can hardly hope to obtain. A part of this collection has been received, and we are indebted to Dr. H. Woodward for supervising that invoice.

Messrs. Scott and Osborne have returned the Fossil Mammals which had been lent to them.

The cast of Iguanodon obtained from the Brussels Museum has been successfully mounted, and forms the centre-piece of the Jurassic Exhibition Room.

From the Oxford Museum we have received in exchange some casts through Professor Lankester.

From Mr. Alan Owston we have received a few Japanese desiderata; from Mr. Russell Johnson of Buffalo some specimens of Euryp-terus; from Dr. Beecher some interesting preparations of Trilobites; from Mr. Appleton Sturgis a most interesting Sponge from New Guinea; and from Mr. F. W. Townsend a valuable alcoholic collection of Invertebrates from the Persian Gulf.

Considerable material has been sent to different investigators, either for study or in exchange, and I may mention the National Museum, the British Museum, and the Jardin des Plantes as having received from us collections to fill some of their desiderata.

The alcoholic specimen of *Pleurotomaria* collected by the "Hassler" has been sent to Professor E. Bouvier of the Jardin des Plantes for investigation.

As usual, the facilities offered by the Museum Library and its collections have been available to properly qualified persons under suitable restrictions. These often seem petty to the applicants, but are the results of our experience as necessary for the safe-keeping of the books and of the collections.

I beg to call the attention of the Corporation to the precarious situation of the Museum. We have been most fortunate during the past twenty years in enlisting the support of assistants who have served the Museum for small salaries, or who have given their services, from the interest they felt in its development, and on account of the facilities for investigation afforded to them. It is evident that, however satisfactory this may be to us at present, we can hardly hope to depend upon this state of things as upon a permanent organization.

The time will come when the Curator must receive an adequate compensation, and whenever we are obliged to pay our comparatively small staff for their whole time such salaries as are paid at other institutions for similar work, our salary lists will have to be greatly increased merely to carry on the organization of the Museum as it now exists. If the Museum is hereafter to expect a reduction of income as great as it has suffered during the past year, a totally different scale of expenditures must be established if we would keep within the limits of our resources.

For the academic year 1894-95 our income has diminished fully fifteen per cent., leaving us a sum totally inadequate for so large an institution. We cannot hope to preserve the collections and properly care for them with a smaller staff than we at present employ for that purpose. We can only curtail our expenditures by limiting our publications and the purchase of books, by withdrawing all facilities now given for original research, and in fact by stopping the wheels of everything which has given it its activity in the past. Such a condition of things is greatly to be deplored; for it is very doubtful if the Museum could long retain the services of skilled assistants or of a competent Director after its scientific usefulness was so seriously impaired by want of means.

Publications of the Museum during 1894-95 : —

Of the Bulletin : —

Vol. XVI. (Geological Series, Vol II.)

No. 15. Notes on the Geology of the Island of Cuba, based on a Reconnoissance made for Alexander Agassiz. By R. T. Hill. pp. 45. 9 plates. April, 1895.

[Vol. XVI. *is complete.*]

Vol. XXV.

No. 8. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." XIV. The Pelagic Schizopoda. By A. Ortmann. pp. 14. 1 plate. September, 1894.

No. 9. Cruise of the Steam Yacht "Wild Duck" in the Bahamas, January to April, 1893, in Charge of Alexander Agassiz. II. Notes on the Shells collected. By W. H. Dall. pp. 12. 1 plate. October, 1894.

No. 10. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." XIII. Die Opisthobranchien. Von R. Bergh. pp. 110. 12 plates. October, 1894.

No. 11. Cruise of the Steam Yacht "Wild Duck" in the Bahamas, January to April, 1893, in charge of Alexander Agassiz. III. An account of some Medusae obtained in the Bahamas. By A. G. Mayer. pp. 8. 3 plates. November, 1894.

No. 12. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." XVI. Die Pelagischen Copepoden. Von W. Giesbrecht. pp. 22. 4 plates. April, 1895.

[Vol. XXV. *completed.*]

Vol. XXVI. (December, 1894—April, 1895. *Complete.*)

No. 1. A Reconnoissance of the Bahamas and of the Elevated Reefs of Cuba in the Steam Yacht "Wild Duck," January to April, 1893. By A. Agassiz. pp. 204. 47 plates. December, 1894.

No. 2. A Visit to the Bermudas in March, 1894. By A. Agassiz. pp. 78. 30 plates. April, 1895.

Vol. XXVII.

No. 1. Spermatogenesis of *Caloptenus femur-rubrum* and *Cicada tibi-cen.* By E. V. Wilcox. pp. 34. 5 plates. May, 1895.

No. 2. On the Early Development of *Limax*. By C. A. Kofoed. pp. 86. 8 plates. August, 1895.

No. 3. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." XVII. Birds from Cocos and Malpelo Islands, with Notes on Petrels obtained at Sea. By C. H. Townsend. pp. 8. 2 colored plates. July, 1895.

No. 4. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." XVIII. Die Comatuliden. Von C. Hartlaub. pp. 24. 4 plates. August, 1895.

[Vol. XXVII. *to be continued.*]

Vol. XXVIII. (Geological Series, Vol. III.)

No. 1. Fossil Sponges of the Flint Nodules in the Lower Cretaceous of Texas. By J. A. Merrill. pp. 26. 1 plate. July, 1895.

[Vol. XXVIII. *to be continued.*]

Of the Memoirs: —

Vol. XVII.

No. 3. Reports on an Exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in Charge of Alexander Agassiz, by the U. S. Fish Commission Steamer "Albatross," etc. XII. The Holothuriodea. By H. Ludwig. pp. 183. 19 plates. October, 1894.

[Vol. XVII *is complete.*]

Vol. XVIII contains: —

Reports on an Exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in Charge of Alexander Agassiz, by the U. S. Fish Commission Steamer "Albatross," etc. XV. The Crustacea. By Walter Faxon. pp. 292. 67 plates, 1 chart. April, 1895.

Vol. XIX.

No. 1. The Cyprinodonts. By S. Garman. pp. 180. 12 plates. July, 1895.

[Vol. XIX *to be continued.*]

ALEXANDER AGASSIZ.

October 1, 1895.

THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — Although a year has passed since the death of the Honorable Robert C. Winthrop, I can but recall the fact that when I presented my last report, Mr. Winthrop was still Chairman of the Board of Trustees, and was the last surviving member of the original Board designated by the founder twenty-nine years ago. Mr. Winthrop's interest in this department of the University has been made lastingly manifest by his bequest of \$5000 for a scholarship in the University, to be held by a student in American Archaeology and Ethnology. As a further memorial of Mr. Winthrop, we have received from his executors his life-size portrait which is now hanging in the library; and also a life-size portrait of the founder of the Trust presented by Mr. Peabody to Mr. Winthrop. These companion pictures will ever testify to the friendship of the founder for the chairman who, for twenty-eight years, so faithfully and wisely fulfilled the duties which he accepted.

The Honorable Stephen Salisbury, son of one of the original trustees, has been elected to succeed Mr. Winthrop as Chairman of the Board. Dr. Charles Francis Adams, son of another member of the original Board, has become a member as successor to the Reverend George E. Ellis, who was the successor to Mr. Winthrop as President of the Massachusetts Historical Society, and whose death followed shortly after that of his predecessor. Dr. Agassiz, as President of the American Academy of Arts and Sciences, has become a member of the Board as successor to the late Professor Cooke. The late Rev. E. B. Willson, as President of the Essex Institute, succeeded Dr. Wheatland as Trustee. Mr. Willson, although in full sympathy with the objects of the Museum, resigned in March, 1894, believing that "The progress of research in the departments of investigation which the Museum was established to promote would be greatly strengthened by the coöperation and counsel of gentlemen whose studies and experiences have fitted them preëminently to contribute valuable aid in the lines to which the Museum is particularly devoted." Mr. Charles P. Bowditch was elected to fill the vacancy caused by Mr. Willson's resignation.

On November 10, 1894, Mr. Lucien Carr, who for nearly twenty years held the position of Assistant Curator in the Museum, tendered his resignation. At the last annual meeting of the Trustees, the following vote was passed: "In accepting the resignation of our Assistant Curator, the Trustees of the Peabody Museum desire to express their warm and thankful appreciation of the services Mr. Carr has generously given to the Museum for so many years."

In the last report, mention was made of the Hemenway Collection deposited by the executors of the estate of the late Mrs. Mary Hemenway. The large upper hall in the Museum was placed at the disposal of the executors, and a portion of the collection has been arranged in cases provided by them. This hall is now open to visitors. The arrangement of objects in this room has been made entirely by Dr. J. Walter Fewkes in fulfillment of the plans of the executors of Mrs. Hemenway's estate. Dr. Fewkes has presented the following statement:

"A part of the Hemenway Collection has been installed in the room on the fifth floor. The plan of this exhibit is to show in monographic form the character of the past and present of the Tusayan or Moqui Indians, as far as this is possible, by objects illustrating their arts and practices. To do this, there have been placed on exhibition illustrative specimens of pottery, stone implements, basket ware, blankets, and other objects. The collection of ancient Moqui ceramics is unrivalled, and is larger than that of any other museum in the world. It contains many types which have been figured in Government reports, and also originals of which casts are exhibited elsewhere. The portion of the exhibit illustrating mythology and ritual has been given special attention, and a unique collection of ceremonial paraphernalia is shown in one of the cases. The symbolism associated with all the supernatural beings recognized in Tusayan mythology is shown in a collection of dolls, many of which are exact imitations of idols used in ceremonial rites. The room also contains the famous Kean collection purchased by Mrs. Hemenway. This is a valuable addition to the collections made by the Hemenway Expedition in the past five years, illustrating the ethnology and archaeology of the Tusayan Indians."

It will thus be seen that the Museum has received an important addition to its resources; while the admirable arrangement by Dr. Fewkes has made the collection a most interesting and instructive one to students and visitors. Dr. Fewkes personally collected a large part of the objects here exhibited, during his several expeditions to the Moqui Pueblos, and many of the originals described and figured in his several valuable papers relating to Moqui ceremonials are included in the collection. It is most fortunate that the collection

has been arranged by him, as it is thereby made doubly valuable for study and comparison with similar objects from other tribes.

Another part of the Hemenway Collection, containing most of the Salado valley and Zuñi material secured during the early years of the Expedition, has been received at the Museum, and will soon be placed on exhibition.

The illustrated catalogue of the Rindge Collection is well advanced, and this valuable collection will be exhibited during the present winter.

Dr. George J. Engelmann of Boston having decided to place his large collection in some public museum, where it would be secure from the vicissitudes to which private collections are subject, has presented this well-known and valuable collection to the Peabody Museum. This material, chiefly illustrative of the archaeology of Missouri, was collected by Dr. Engelmann about twenty years ago, while residing in St. Louis. The collection is now being unpacked, and it is therefore only possible to make this brief acknowledgment in the present report.

Under a vote of the American Antiquarian Society, by which it was determined to place in the Peabody Museum, as a permanent deposit, such archaeological and ethnological objects as had been gathered by the Society during its eighty-three years of existence, but could not be properly cared for by the Society except by taking space needed for its library, I was authorized to select such objects as would be acceptable to the Museum. We have thus received many invaluable ethnological specimens. Among these are objects obtained years ago from various Indian tribes, which money could not now procure, since their manufacture and use have ceased in consequence of the changed conditions of Indian life. Especially worthy of mention are the several pieces of old embroidery made with split and colored porcupine quills on prepared deer skin. These exhibit interesting native patterns and are of beautiful and delicate workmanship. This sort of work soon gave way, under influence of trade with whites, to the coarser and more gaudy bead-work which we have been obliged to study for survivals of original designs. Among the pieces is an authenticated belt worn by King Philip. Another object of inestimable ethnological value is a bow taken from an Indian killed in Sudbury in 1665. The history of this bow is well authenticated, and it is in all probability the only ancient New England Indian bow in existence. The bow is probably of hickory and is five feet seven inches in length, one and one-eighth in thickness in the middle and one and three-fourths in great-

est width. These dimensions show that the New England bow was much longer than generally supposed. The collection also contains many valuable specimens from Alaska, South America, Africa, Asia, and the Pacific Islands, all of which were collected many years ago.

Many other gifts to the Museum have been received during the year, but the limits of this report permit only the mention of the names of the following givers: Mrs. Mary Copley Thaw, Mr. Charles P. Bowditch, Dr. C. C. Abbott, Mr. Clarence B. Moore, Professor N. S. Shaler, Mr. W. W. Dodge, Mr. W. M. Duffield, Mr. R. Duffield, Miss E. R. Fisher, Mr. W. L. Gifford, Mr. C. T. Holmes, Professor Lucius L. Hubbard, Rev. H. O. Ladd, Mr. C. W. Mead, Mr. Appleton Sturgis, Mr. James C. Wade, Mr. R. C. Winthrop, Jr., Mr. J. B. Woodworth, Dr. H. S. Washington, Mr. A. A. Folsom, Dr. S. W. Driver, l'École d'Anthropologie de Paris, and the Woman's Anthropological Society of Washington. By the liberality of Mr. R. C. Winthrop, Jr., we have been able to provide the laboratory with a much-needed modern microscope and its accessories. From Mr. George Keith of Pretoria, South Africa, we have received, as an exchange, an interesting collection of stone implements corresponding closely with those found in the Delaware valley. These implements are regarded as the oldest and most primitive found in South Africa. A few desiderata have been purchased.

From time to time we have received at the Museum the collections made by Miss Alice C. Fletcher among the Omaha and Nez Percé tribes. This material has been awaiting labelling and arrangement, until Miss Fletcher's work in the field would permit her to devote the necessary time to the work. During the past summer the collection has been brought together and catalogued; and it has been arranged as well as possible in the limited space which could be devoted to this instructive representation of Indian life and customs. Miss Fletcher is now actively engaged in preparing her account of the objects which will be embodied in her memoir on the Omaha Indians. This we hope soon to be able to publish as one of the Peabody Museum papers.

Mrs. Nuttall has continued her researches upon the ancient Mexican calendar system. The printing of her memoir has been delayed owing to her desire to incorporate in the text additional material.

Although we have not been able to carry on explorations to the same extent as in some former years, the income of the Wolcott

Fund has furnished the means of continuing the explorations in the Delaware valley, under the immediate direction of Mr. Ernest Volk. This exploration of ancient village sites and burial places, has added much of importance to our knowledge of the archaeology of the valley. It is here, more than elsewhere, that we are obtaining facts relating to man's chronology on the eastern side of the continent. In this connection, Dr. Abbott's recent discovery of a portion of a human frontal bone in the gravel is of particular interest. This bone has been received at the Museum, and it has every appearance of having been rolled about in water and sand until it was deposited where it was found.

For a long time archaeologists have known that the felsite forming the great rock at Moosehead Lake, known as Mount Kineo, was extensively used for the manufacture of stone implements. It has long been my wish to have this region carefully examined for the sites of the ancient quarries. This desire has been stimulated during the past few years by the large specimens of felsite blades found on the borders of the lake by Professor Lucius L. Hubbard, who has given the specimens to the Museum. Therefore, during the past summer, I requested Mr. Willoughby to make a careful examination about the base of the mountain. He was successful in finding three ancient quarries where the rock had been chipped into rude forms preparatory to making the finished implements. Mr. Willoughby brought to the Museum a series of specimens, including the roughly broken rock and implements in various stages of manufacture; he also took photographs of the different sites, and prepared a plan showing the sites at the base of the mountain; making altogether an instructive archaeological exhibit. The Wolcott fund also gave the means for this research.

During the past year the Museum continued the archaeological work at Copan, Honduras. For the money necessary for this extensive work we are especially indebted, as heretofore, to Mr. Charles P. Bowditch and the friends of the Museum who are interested in this important scientific research. In the work of the past year, we have also had the coöperation of the American Museum of New York, which will receive its portion of the sculptures and other objects brought home. The expedition was under the immediate direction of Mr. George Byron Gordon, a member of the preceding expedition, who was assisted for a portion of the time by Mr. Robert Burkitt. Mr. Gordon, although beset by many difficulties, owing to the unsettled condition of the country and the change of administration, carried on the work with remarkable energy and persistency.

Thoroughly imbued with the scientific importance of his researches, he devoted his time largely to ascertaining the character of one of the great pyramids which is now a mass of ruins, and to a wonderful stairway, which, when intact, must have been one of the most remarkable features of this ancient city. This is known as the "Hieroglyphic Stairway" from the fact that the front of each of the steps is covered with deeply cut hieroglyphs combined with sculptures of the human form in various attitudes. This stairway is twenty-four feet in width, and it originally led from the floor of the great plaza to the top of the main structure, — a height of over one hundred feet. An effort was made to put the fallen stones of the upper steps in their natural sequence and then to take moulds of them. This work was carried on amid great difficulties, but moulds were secured of a portion of the stairway, although many of the stones are yet to be found in order to make it complete. A large part of the stairway still remains covered by thousands of tons of debris, and it is the clearing away of this material that we hope to see accomplished by the next expedition. It is believed that the missing stones of the upper portion will be found among the debris, and that the lower portion of the stairway will be discovered intact. If we are able to clear away the rubbish, and if our suppositions prove to be correct, we shall probably bring to light the most important hieroglyphic inscription in Central America. During the removal of the debris about this stairway a number of pieces of sculpture were found, some of which have been brought to the Museum. It is greatly to be hoped that the means will be obtained for the continuation of this important work, and also that satisfactory arrangements will be made with the present government of Honduras, that the exploration may be carried on without interruption.

During the past four years \$23,922.64 have been expended in the explorations at Copan carried on by the Museum. \$8,318.64 was the expense of the previous expeditions to Yucatan, making a total of \$32,241.28 expended in researches relating to the ancient civilization of Central America. This money has been given by friends, as stated in this and previous reports. This substantial aid certainly indicates an interest in American archaeology. The results obtained by these explorations are of the utmost importance in relation to the ancient history of America.

The need of additional space for the arrangement of the specimens which have accumulated is now urgent; for the usefulness of the Museum is seriously impaired by lack of room. The cases are overcrowded, and valuable collections are stored away in drawers and

boxes in every available space.' It is impossible to arrange the various collections in their proper sequence, as would be done if the building were completed, so that each hall might contain the collections which should be brought into juxtaposition.

Another very serious need, upon which I have dwelt in former reports, is the need of several museum assistants who should devote their time to work upon the collections. It is impossible, with the present limited means and the slight assistance I can secure, to properly care for the vast amount of valuable material now in the Museum.

In accordance with the arrangement mentioned in my last report, I have devoted a certain portion of my time to the direction of the Anthropological Department of the American Museum of Natural History in New York. In connection with this work I have organized and directed several parties for field research in America. These explorations, in addition to the one carried on by Mr. Volk, have enabled me to place in the field several students in this department of the University, thus giving them the opportunity of learning the methods of field work, —an important part of their studies in this department.

The additions to the library consist of ninety-eight volumes and eighty-eight pamphlets on anthropological subjects, which have been duly catalogued at the central Library.

Beginning with the present college year, the instruction in the department of American Archaeology and Ethnology was extended to include two courses, primarily for graduates. This extension was made possible by the appointment of Dr. George A. Dorsey as Instructor in Anthropology. The courses are as follows:

* 1. *General Anthropology, with special reference to American Archaeology and Ethnology.* Lectures and laboratory work, Monday, Wednesday, Friday, at 3.30, with additional laboratory work. PROFESSOR PUTNAM and DR. DORSEY.

This course is primarily for graduates, but may be taken by undergraduates, who are properly qualified, upon obtaining the consent of the instructor. The first part of the course is devoted to the study of somatology or physical anthropology; the second part to ethnology, with special reference to the origin and development of primitive arts and culture; the third part to the study of archaeology and ethnography. Man is considered in relation to his distribution over the earth during past and present time, and to his division into groups. Each group or variety of man is studied separately, special attention being given to American groups.

EXPENSES, 1894-95.

Building.

Fuel, water, and gas	\$324.42	
Repairs and incidentals	59.12	
Care of building	799.00	
	<hr/>	\$1,182.54

Museum.

Explorations and collections	\$754.79	
Express, postage, telephone, and telegraph	159.34	
Incidentals	112.81	
Photographing and drawing material	69.97	
Library	11.00	
Salaries	3,354.27	
	<hr/>	4,462.18

Instruction equipment.

Incidentals	\$48.98	
Microscope (Mr. Winthrop's gift)	41.60	
	<hr/>	90.58

Honduras Expedition Committee 6,175.00

Balance to next account 108.40

\$12,018.70

Respectfully submitted,

F. W. PUTNAM,

*Peabody Professor of American Archaeology
and Ethnology, Curator of the Museum.*

CAMBRIDGE, November 23, 1895.

THE SEMITIC MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY :

The additions by purchase during the past year include forty-three Babylonian clay tablets of the kind known as 'contract tablets,' twelve Babylonian-Assyrian stone seals, and four coins. Three of the seals are conical in shape, the others cylindrical. Most of them are well preserved, and one of them is specially interesting on account of the carving upon it. This carving represents the conventional 'sacred tree,' the winged globe above, and on either side of the tree a deity whose upper half is human and the lower half a fish. This fish-god stretches out his hand toward the tree in the usual conventional way.

In the last report mention was made of an inscribed alabaster tablet, perfectly preserved, of the 14th century B.C., and the hope was expressed that some friend might present it to the Museum. Through the generosity of Mr. Jacob H. Schiff and Mr. Henry C. Warren, this hope has been fulfilled. The tablet, about twelve inches by nine, contains an inscription of sixty-five lines, recording the restoration of a temple in the Assyrian capital, Asshur, and calling down curses on anyone who should ever injure the stone or tamper with the writing. Near the middle of the inscription several of the lines have been ground away, and the space has been written over again by a second hand. This circumstance gives to the tablet an extraordinary interest.

The collections of the Museum have lost none of their attractiveness for the public, while for certain of the Semitic courses of instruction they are of the greatest value.

D. G. LYON, *Curator.*

November 23, 1895.

THE FOGG ART MUSEUM.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR,—I have the honor to submit the following report of the Fogg Art Museum :

In accordance with instructions from the Committee of the Corporation to expend the sum of \$10,000 dollars in the purchase of casts and photographs, orders were placed early last spring in London, Paris, Berlin, Dresden, Munich, Florence and Athens. During the summer the larger part of the objects ordered were received. The casts have been suitably mounted and arranged in five rooms on the ground floor, as follows : In the large central hall are placed the casts from Greek and Greco-Roman sculptures. These comprise typical examples representing the most important phases of Greek Art during the fifth and the fourth centuries B.C. Among them are the fine colossal statue of Apollo from the Temple of Zeus at Olympia ; several statues from the pediments of the Parthenon, together with a considerable portion of the frieze of this monument ; the Lemnian Athena, the Niké of Paionius, the Hermes of Praxiteles, the Venus of Melos, and several beautiful statutes and statuettes found at Epidaure in the year 1884. In the small middle west room are the casts from Egyptian and Assyrian sculptures. These, though few in number, are also typical in character. The north east room is devoted to casts from works by sculptors of the Italian Renaissance ; the middle east room to those from the works of Michael Angelo, including two of the recumbent figures from the Medici tombs, with the sarcophagus on which they rest, and the Pietà of Rome ; while the small south east room contains a few examples of mediæval sculpture.

In the south west room are placed a classified collection of electro-types from Greek and Roman coins, loaned by the Classical Department, and a small collection of original ancient vases, among which are sixteen pieces illustrating the finest Greek pottery, loaned by Mr. E. P. Warren. The coins are of especial value to the student of the Fine Arts, since they afford a fuller illustration of the range of the Greek genius than is to be found in any other class of extant objects. As works of art the coins of the ancients have not hitherto been studied with the attention that they deserve. They have been

less accessible than other ancient objects to students of art in general, and because of their small scale the remarkable qualities of design which they exemplify have been largely overlooked. In order to exhibit more effectively these qualities, as illustrated in a few of the finer examples of the collection, a series of solar enlargements has been hung over the cases.

The collection of photographs is already large, amounting to nearly fifteen thousand; and in this department we may hope to make additions until all phases of the Fine Arts of all epochs are adequately represented.

In the architecture, sculpture, and painting of the ancient, mediæval, and Renaissance periods, this collection comprises a wide range of material. In Roman, Christian Roman, Romanesque and Gothic architecture, and in the architecture, sculpture, and painting of the Renaissance in Italy, it is, with exception of Venetian painting, practically exhaustive. The collection is being filled out in the departments of Ancient Greek Art, and Venetian, German, Dutch, Spanish, French, and English Art of the Renaissance and of modern times. The photographs are stored in dust-proof cases without portfolios in a manner that economizes space and renders them readily accessible. They are classified in groups by epochs: Ancient, Mediæval, Renaissance, Modern; and each group is subdivided (1) into countries and (2) into departments: Architecture, Sculpture, Painting. The photographs of each group are then arranged alphabetically in one series by names of artists where these are known, and by places where names are not known; except those of architecture, chiefly of the Renaissance, from buildings different parts of which are by different designers. These are arranged by places with card references to the artists when known. It is hoped that this classification will facilitate their use. Since our primary sources of information are the works of art themselves, it is desirable to have the photographs which represent them grouped in such a manner as to bring together all that the collection affords of a given class.

The photographs are accessible to all members of the University, and to other suitable persons, day and evening. For their convenient examination large tables are provided in the photograph room.

The collection is a valuable addition to the resources of the University. We hardly yet realize that through photography the comparative study of the Fine Arts has become for the first time possible.

While the walls of the upper galleries remain unoccupied by original works, or by reproductions of important character, they will be hung, from time to time, with photographs affording by relays illustration of various phases of the art of painting. The series at present displayed illustrates the art of Michael Angelo, Raphael, and Leonardo de Vinci, together with that of some of the earlier masters of the Central Italian schools. In the corridor of the upper floor a series of photographic reproductions of drawings by the Italian and German masters of the Renaissance is permanently hung, while over the stairway are placed some solar enlargements from important ancient monuments of architecture.

In several of the rooms of the ground floor, together with the casts, explanatory photographs are hung. Among them is a very large, and particularly fine, carbon of the Ghiberti gates. These not only illustrate the relation of the given statues and reliefs to their surroundings, but they also represent some qualities of the original works in marble and bronze which the casts fail to exhibit.

The lecture hall is provided with an electrical stereopticon of the most improved type, and the formation of a large collection of slides is begun. These, together with a considerable number of architectural diagrams belonging to the Fine Arts Department and deposited in the Museum, afford the most ample means of illustration for large classes.

The Fogg collection of paintings, furniture, and objects of virtue is deposited in the west front room of the ground floor. A selection of the paintings is hung upon the walls, and the rest are placed on sliding frames in a dust-proof case. The other objects are arranged behind a screen of plate glass, where they may be freely inspected without chance of injury.

In addition to the reproductions of various kinds to which the collections thus far mainly consist, it is greatly to be desired that the Museum should possess at least a few original works of high class, especially in the department of painting. Only works of more than common merit are suitable for the purposes of a University Museum, and such works are not always to be readily obtained. Opportunities do, however, from time to time occur, and it is not impossible that in the near future the Museum should, through the generosity of friends, acquire some original works of good quality by representative masters of the great schools of the past.

In the absence of originals, or as supplementary to a few such works, good copies of important paintings would be of great value.

Of course a copy can seldom exhibit the subtle qualities of a master's handling so as to be a completely satisfactory exponent of his style; but the color scheme of a given work, with its true values and harmonies, may be so faithfully rendered as to be of the greatest service in illustrating what is most important in the original.

CHARLES H. MOORE, *Curator*.

RADCLIFFE COLLEGE.

TO THE PRESIDENT OF THE UNIVERSITY: —

SIR, — I have the honor to present my report on the condition of Radcliffe College during the academic year 1894–95.

The number of students in actual attendance during the year was two hundred and eighty-four: —

Seniors	23
Juniors	25
Sophomores	29
Freshmen	39
Graduate Students	30
Special Students	138
Total	284

These figures show a gain of twenty-nine over the preceding year.

At the Commencement in June, 1895, twenty-three students received the degree of Bachelor of Arts. Seven of these received the degree *magna cum laude*; seven received the degree *cum laude*; five were graduates of other colleges, who had entered the Senior Class and were not candidates for a degree with distinction. Of the sixteen students who had entered Radcliffe as Freshmen, fourteen had distinguished themselves. This is a remarkable record. Three students received the degree of Master of Arts. Forty-five Alumnae who held the certificate of the Society for the Collegiate Instruction of Women received the Radcliffe degree.

In response to a much-increased demand, examinations for admission were held, in June, 1895, in Albany, Cleveland, Concord (N. H.), Exeter, Groton, Minneapolis, Portland, and Washington, D. C., as well as in Cambridge and New York. Two hundred and sixty-three candidates presented themselves for examination; thirty-two were candidates for admission as special students; two for admission as Sophomores. One hundred and ten took the Preliminary Examinations, and eighty-nine the Final Examinations.

Thirty candidates took part of the examinations, or worked off admission conditions. The results of the final examinations are given in the following table: —

	Admitted.	Admitted "Clear."	Rejected.
June	72	33	6
September	11		
Total	83		
Total rejected	6		
	89		

Eighty-three candidates were admitted as Freshmen in 1895, as against sixty-two in 1894.

Of the thirty-two candidates examined for admission as special students, twenty-three were admitted and nine rejected.

Of the thirty graduate students registered during the year, twenty-two were from other colleges than Radcliffe. Of the "Courses primarily for graduates in Harvard University open to competent students of Radcliffe College," eight courses in five departments were taken by twelve students:

Classical Philology was taken	By one student.
Germanic Philology was taken	By two students.
Philosophy was taken	By seven students.
History was taken	By one student.
Mathematics was taken	By one student.

The members of the Academic Board of Radcliffe College for 1894-95 were: — Professors Byerly (*Chairman*), Greenough, Goodale, Allen, James, Macvane, B. O. Peirce, von Jagemann, and Kittredge, of Harvard College; and the President, the Dean, and the Regent of Radcliffe College.

This year, the first under the new conditions, was felt to be of great importance in the history of Radcliffe College; it was a period of transition, therefore not without risk; but the dangers that were dreaded have been avoided; difficulties that looked serious have disappeared; and, at the close of the year, we see with profound satisfaction that the growth and development of the College are all that we could have hoped. The change from the "Annex" to the College, though not strikingly evident, is vital. The measures taken in May and June, 1894, by the President and Fellows of Harvard College, "constitute a complete guarantee by Harvard University for all the instruction given, the examinations held, and the degrees conferred by Radcliffe College," and this alliance with Harvard gives Radcliffe a strength and stability, a purpose and continuity, such as it did not have before. Evidences of the importance to us of the alliance appear in many ways: — in the closer relations between Radcliffe and the preparatory schools for girls, public and private, throughout the country; in the lengthening list of gifts and givers; above all, in the increasing number of graduates of other colleges, who find here an opportunity for the highest instruction. Beyond a doubt, the opening of the graduate courses in Harvard University has been a most important step in the higher education of women; its consequences are far-reaching and widespread. We have every reason to hope that there will grow up in Cambridge a graduate

school for women, which will be small in numbers perhaps, but certainly great in influence, and of incalculable value as a factor in the education of the country. The future of Radcliffe College seems secure and full of promise.

During the past year, two scholarships have been founded, one in memory of the Widow Joanna Hoar, the mother of the third President of Harvard College; the other, the gift of the former pupils of a school in Philadelphia. Including \$10,000 for the two scholarships just mentioned, and certain sums given expressly for the purchase of books, the gifts, bequests, and legacies during the year amount to \$90,455.24. The expense of printing a monograph was borne by a friend who desires to be anonymous. This monograph, the seventh in our series, is on "The Unity of Fichte's System," by Anna Boynton Thompson, a special student, and is an admirable piece of work.

Questions of discipline offer no difficulties that are not easily met. Questions of health and physical well-being, on the other hand, require and receive constant and serious attention. For a satisfactory solution of these problems, we look forward with confidence to the future.

AGNES IRWIN, *Dean.*

DECEMBER, 1895.

APPENDIX.

RESIGNATIONS.

- HENRY JACKSON, Assistant in Clinical Medicine, October 29, 1894.
WILLIAM HENRY BAKER, Professor of Gynaecology, December 31, 1894, to take effect March 1, 1895.
JEAN ANTOINE MURE, Instructor in French, March 25, 1895.
ALEXANDER BURR, Instructor in Meat Inspection, April 8, 1895.
CHARLES LORING JACKSON, Acting Curator of the Mineralogical Museum, May 20, 1895.
WILLIAM CROWNSHIELD ENDICOTT, Fellow of the Corporation, September 24, 1895.
CHARLES FRANKLIN DUNBAR, Dean of the Faculty of Arts and Sciences, September 24, 1895.
ERNEST LEE CONANT, Instructor in Law, September 30, 1895, as of August 31, 1895.
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APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

- ALEXANDER AGASSIZ, to be a member of the University Council, October 8, 1894.
BENJAMIN LINCOLN ROBINSON, to be a member of the University Council, October 8, 1894.
WILLIAM PARKER COOKE, to be Instructor in Crown and Bridge Work for three years from September 1, 1894, October 8, 1894.
LEWIS JEROME JOHNSON, to be Instructor in Civil Engineering for three years from September 1, 1894, October 8, 1894.
SAMUEL HOAR, to be a Fellow of the Corporation, November 7, 1894.
CHARLES HERBERT MOORE, to be Curator of the William Hayes Fogg Art Museum of Harvard College, February 11, 1895, from March 1, 1895.
THEOBALD SMITH, to be Professor of Applied Zoölogy, April 8, 1895.
HUGO MÜNSTERBERG, to be Professor of Experimental Psychology, May 13, 1895, from September 1, 1895.
SAMUEL WILLISTON, to be Professor of Law, May 13, 1895, from September 1, 1895.
JOHN ELIOT WOLFF, to be Professor of Petrography, May 13, 1895, from September 1, 1895.
FRANCIS HENRY DAVENPORT, to be Assistant Professor of Gynaecology for five years from September 1, 1895, May 13, 1895.
JAMES HARDY ROPES, to be Instructor in New Testament Criticism and Interpretation, for three years from September 1, 1895, May 13, 1895.
HAROLD CLARENCE ERNST, to be Professor of Bacteriology, May 20, 1895, from September 1, 1895.

- GEORGE PIERCE BAKER, to be Assistant Professor of English for five years from September 1, 1895, May 20, 1895.
- HENRY LLOYD SMYTH, to be Assistant Professor of Mining for five years from September 1, 1895, May 20, 1895.
- CHARLES TOWNSEND COPELAND, to be Instructor in English, and Lecturer on English Literature, May 20, 1895, from September 1, 1895.
- ALFRED BULL NICHOLS, to be Instructor in German, May 20, 1895, from September 1, 1895.
- ALFRED COPE GARRETT, to be Instructor in English, June 10, 1895, from September 1, 1895.
- EDMUND HERSEY, to be Superintendent of the Bussey Farm, and Instructor in Farming, June 10, 1895, from September 1, 1895.
- JOHN ELIOT WOLFF, to be Curator of the Mineralogical Museum, May 20, 1895.
- JAMES BARR AMES, to be Dean of the Law Faculty, June 18, 1895, from September 1, 1895.
- FRANKLIN DEXTER, to be Assistant Professor of Anatomy for five years from September 1, 1895, June 18, 1895.
- WALLACE CLEMENT SABINE, to be Assistant Professor of Physics for five years from September 1, 1895, June 25, 1895.
- RICHARD COBB, to be Corresponding Secretary, September 24, 1895.
- BYRON SATTERLEE HURLBUT, to be Recording Secretary, September 24, 1895.
- JAMES MILLS PEIRCE, to be Dean of the Faculty of Arts and Sciences, September 30, 1895, from September 1, 1895.
- EUGENE HANES SMITH, to be Professor of Mechanical Dentistry, September 30, 1895, from September 1, 1895.
- MONTAGUE CHAMBERLAIN, to be Secretary of the Lawrence Scientific School, September 30, 1895, from September 1, 1894.

[FOR ONE YEAR OR LESS.]

For 1894-95.

- HENRY LIVINGSTON COAR, to be Instructor in German, October 8, 1894.
- RICHARD ELWOOD DODGE, to be Instructor in Geology, October 8, 1894.
- LEON STACY GRISWOLD, to be Instructor in Geology, October 8, 1894.
- RICHARD CLARKE MANNING, to be Instructor in Latin, October 8, 1894.
- EUGENE THOMAS ALLEN, to be Assistant in Chemistry, October 8, 1894.
- JOSEPH WILLIAM BLANKINSHIP, to be Assistant in the Botanical Museum, October 8, 1894.
- ALONZO MCGEE COLLETTE, to be Assistant in the Botanical Museum, October 8, 1894.
- REGINALD ALDWORTH DALY, to be Assistant in Geology, October 8, 1894.
- ROBERT JAY FORSYTHE, to be Assistant in Chemistry, October 8, 1894.
- WILLIAM FENWICK HARRIS, to be Assistant in Classics, October 8, 1894.
- LEWIS DANA HILL, to be Assistant in Physics, October 8, 1894.
- MARTIN HILL ITTNER, to be Assistant in Chemistry, October 8, 1894.
- ARTHUR NEWHALL JOHNSON, to be Assistant in Drawing, October 8, 1894.
- CLAUDE PERRY JONES, to be Assistant in Chemistry, October 8, 1894.
- HERBERT LYON JONES, to be Assistant in Botany, October 8, 1894.
- GEORGE OENSLAGER, to be Assistant in Chemistry, October 8, 1894.

CHAUNCY RUSCH PERRY, to be Assistant in Surveying and Drawing, October 8, 1894.

HERBERT MAULE RICHARDS, to be Assistant in Botany, October 8, 1894.

HOWARD BURTON SHAW, to be Assistant in Electrical Engineering, October 8, 1894.

ROBERT DECOURCY WARD, to be Assistant in Meteorology, October 8, 1894.

CHARLES T WENTWORTH, to be Assistant in History, October 8, 1894.

SIDNEY CALVERT,	}	to be Proctors, October 8, 1894.
EVERETT PASCOE CAREY,		
GEORGE DAVIS CHASE,		
REGINALD ALDWORTH DALY,		
WILLIAM PRESTON FEW,		

PHILIP STAFFORD MOXOM, to be Preacher to the University, October 10, 1894.

GEORGE PIERCE BAKER, to be a member of the Administrative Board of Harvard College, October 10, 1894.

JAMES BARR AMES,	}	to be a Committee on the Regulation of Athletic Sports, October 10, 1894.
GEORGE ALONZO BARTLETT,		
WILLIAM MORRIS DAVIS,		
EDWARD HICKLING BRADFORD,		
WILLIAM HOOPER,		

PERRY DAVIS TRAFFORD,

EUGENE ABRAHAM DARLING, to be Assistant in Bacteriology, October 10, 1894.

FREDERICK SPAULDING DELUE, to be Assistant in Histology, October 10, 1894.

GEORGE PARKER WINSHIP, to be Assistant in History, October 10, 1894.

HUMPHREY WARD, to be Lecturer on English Art in the Eighteenth Century, October 29, 1894.

RICHARD COBB, to be Assistant Secretary, October 29, 1894.

ALPHONSE MARIN LA MESLÉE, to be Instructor in French, October 29, 1894.

CHARLES ROCHESTER EASTMAN, to be Assistant in Palaeontology, October 29, 1894.

PERLEY LEONARD HORNE, to be Assistant in History, October 29, 1894.

JAMES SULLIVAN, to be Assistant in History, October 29, 1894.

CHARLES CUTLER TORREY, to be Instructor in Semitic Languages, November 7, 1894.

AUGUSTUS SMITH KNIGHT, to be Assistant in Clinical Medicine, November 7, 1894.

JOHN PERCIVAL SYLVESTER, to be Assistant in Chemistry, November 7, 1894.

JAMES SULLIVAN, to be Proctor, November 12, 1894.

ROBERT WARREN FULLER, to be Assistant in Chemistry, November 26, 1894.

NELSON WILLIAM HOWARD, to be Assistant in Law, December 10, 1894.

HERBERT SPENCER JENNINGS, to be Assistant in Zoölogy, December 10, 1894.

HERBERT VINCENT NEAL, to be Assistant in Zoölogy, December 10, 1894.

HENRY LEE,	}	to be Trustees of the Museum of Fine Arts, Jan- uary 15, 1895, from January 1, 1895, to January 1, 1896.
WILLIAM STURGIS BIGELOW,		
ARTHUR ASTOR CAREY,		

CYRUS GUERNSEY PRINGLE, to be Botanical Collector, January 15, 1895, for 1895.

JAMES RENDEL HARRIS, to be Lecturer on Recent Biblical Discoveries, January 15, 1895.

ARTHUR BLISS SEYMOUR, to be Assistant in the Cryptogamic Herbarium, April 29, 1895.

For 1895-96.

FRANK BREWSTER, to be Instructor in the Peculiarities of Massachusetts Law and Practice, September 30, 1895,

JOHN WESLEY CHURCHILL, to be Instructor in Elocution, June 10, 1895.

EDWARD HALE, to be Assistant in Homiletics, June 25, 1895.

CHARLES BURTON GULICK, to be Instructor in Greek, May 13, 1895.

JAMES EDWIN LOUGH, to be Assistant in Psychology, May 20, 1895.

EDGAR ARTHUR SINGER, to be Assistant in Psychology, May 20, 1895.

GEORGE TRUMBULL LADD, Professor of Moral Philosophy and Metaphysics in Yale University, to conduct the Ethical Seminary, May 27, 1895.

DANIEL DENISON SLADE, to be Lecturer on Comparative Osteology, May 27, 1895.

GEORGE WILLIS BOTSFORD, to be Instructor in the History of Greece and Rome, May 27, 1895.

THOMAS HALL, to be Instructor in English, May 27, 1895.

HERBERT LYON JONES, to be Instructor in Botany, May 27, 1895.

CHARLES LOWELL YOUNG, to be Instructor in English, May 27, 1895.

HERBERT VAUGHAN ABBOTT, to be Assistant in English, May 27, 1895.

NEWTON SAMUEL BACON, to be Assistant in Chemistry, May 27, 1895.

JOSEPH WILLIAM BLANKINSHIP, to be Assistant in the Botanical Museum, May 27, 1895.

RICHARD COBB, to be Assistant in English, May 27, 1895.

WILLIAM DENNIS COLLINS, to be Assistant in Physics, May 27, 1895,

JOHN CORBIN, to be Assistant in English, May 27, 1895.

LINDSAY TODD DAMON, to be Assistant in English, May 27, 1895.

PITTS DUFFIELD, to be Assistant in English, May 27, 1895.

CHARLES MACOMB FLANDRAU, to be Assistant in English, May 27, 1895.

ROBERT WARREN FULLER, to be Assistant in Chemistry, May 27, 1895.

HENRY COPLEY GREENE, to be Assistant in English, May 27, 1895.

JOHN IRVIN HAMAKER, to be Assistant in Zoölogy, May 27, 1895.

JOHN GODDARD HART, to be Assistant in English, May 27, 1895.

LEWIS DANA HILL, to be Assistant in Physics, May 27, 1895.

GIFFORD LeCLEAR, to be Assistant in Physics, May 27, 1895.

HENRY RICHARDSON LINVILLE, to be Assistant in Zoölogy, May 27, 1895

GEORGE OENSLAGER, to be Assistant in Chemistry, May 27, 1895.

WILLIAM EVERETT STARK, to be Assistant in Physics, May 27, 1895.

JOHN PERCIVAL SYLVESTER, to be Assistant in Chemistry, May 27, 1895.

CHARLES HAMILTON ASHTON, to be Instructor in Mathematics, June 10, 1895.

HEINRICH CONRAD BIERWIRTH, to be Instructor in German, June 10, 1895.

ALPHONSE BRUN, to be Instructor in French, June 10, 1895.

ARCHIBALD CARY COOLIDGE, to be Instructor in History, June 10, 1895.

JOHN CUMMINGS, to be Instructor in Political Economy, June 10, 1895.

GEORGE AMOS DORSEY, to be Instructor in Anthropology, June 10, 1895.

JEREMIAH DENNIS MATTHIAS FORD, to be Instructor in French, June 10, 1895.

JOHN JOSEPH HAYES, to be Instructor in Elocution, June 10, 1895.

- ALPHONSE MARIN LA MESLÉE, to be Instructor in French, June 10, 1895.
 JAMES GRAY LATHROP, to be Instructor in Athletics, June 10, 1895.
 GEORGE HOWARD PARKER, to be Instructor in Zoölogy, June 10, 1895.
 JOHN ALBRECHT WALZ, to be Instructor in German, June 10, 1895.
 FRANK BEVERLY WILLIAMS, to be Instructor in Roman Law, June 10, 1895.
 JAY BACKUS WOODWORTH, to be Instructor in Geology, June 10, 1895.
 WILLIAM McMICHAEL WOODWORTH, to be Instructor in Microscopical Anatomy,
 June 10, 1895.
 MARSHALL HENRY BAILEY, to be Assistant in Hygiene and in Medical Visiting,
 June 10, 1895.
 FRED CLARK PRESCOTT, to be Assistant in English, June 10, 1895.
 PIERRE LA ROSE, to be Assistant in English, June 10, 1895.
 MACY MILLMORE SKINNER, to be Assistant in Semitic Languages and History,
 June 10, 1895.
 CHARLES LIVY WHITTLE, to be Assistant in Mineralogy and Petrography, June
 10, 1895.
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|---|---|--|
| JOHN HENRY BOYNTON,
GEORGE DAVIS CHASE,
LINDSAY TODD DAMON,
JOHN EDGAR EATON,
WILLIAM PRESTON FEW,
FREDERICK ORVILLE GROVER,
JOHN GODDARD HART,
JAMES EDWIN LOUGH,
FREDERICK CHASE McLAUGHLIN,
RICHARD CLARK MANNING,
WILLIAM JOSEPH MILLER,
HERBERT VINCENT NEAL,
FREDERICK CLARK PRESCOTT,
CHARLES MILTON READE,
FRANK CHARLES SCHRADER,
ROBERT REINECK TRUITT,
FREDERICK WILSON TRUSCOTT,
HOLLIS WEBSTER,
HENRY COLLIER WRIGHT,
SAMUEL McCHORD CROTHERS,
ELIJAH WINCHESTER DONALD,
SIMON JOHN MCPHERSON,
PHILLIP STAFFORD MOXOM,
JOHN HEYL VINCENT, | } | to be Proctors, June 10, 1895. |
| IRVING BABBIT, to be Instructor in French, June 18, 1895.
ELIOT FOLGER ROGERS, to be Instructor in Chemistry, June 18, 1895.
CHARLES HENRY CONRAD WRIGHT, to be Instructor in French, June 18, 1895.
ARTHUR DURWARD, to be Assistant in Physics, June 18, 1895.
ALBERT RADDIN SWEETSER, to be Assistant in Botany, June 18, 1895.
ALBERT EMERSON BENSON,
ALBERT ELMER HANCOCK,
ROLAND JESSUP MULFORD, | } | to be Preachers to the University, June 18,
1895. |
- FREDERICK HOWARD WINES, to be Lecturer on Social Classes and Evils, June
 25, 1895.

MAURICE WHITTEMORE MATHER, to be Instructor in Latin, September 24, 1895.
 GEORGE WHITELY COGGESHALL, to be Assistant in Chemistry, September 24, 1895.
 FRANK CHARLES SCHRADER, to be Assistant in the Geological Laboratory, September 24, 1895.

LEBARON RUSSELL BRIGGS,
 GEORGE ALONZO BARTLETT,
 FRÉDÉRIC CÉSAR DE SUMICHRAST,
 JOHN WILLIAMS WHITE,
 JOSIAH ROYCE,
 PHILLIPE BELKNAP MARCOU,
 CHARLES GROSS,
 HUGO KARL SCHILLING,
 MORRIS HICKY MORGAN,
 ALBERT ANDREW HOWARD,
 EDWARD CUMMINGS,
 JOSEPH TORREY,
 WILLIAM FOGG OSGOOD,
 GEORGE PIERCE BAKER,
 BYRON SATTERLEE HURLBUT,
 CHARLES BENEDICT DAVENPORT,
 NATHANIEL SOUTHGATE SHALER,
 EDWIN HERBERT HALL,

to be members of the Administrative
 Board of Harvard College, September 30, 1895.

PAUL HENRY HANUS,
 IRA NELSON HOLLIS,
 JOHN ELIOT WOLFF,
 HERBERT LANGFORD WARREN,
 ROLAND THAXTER,
 JAMES LEE LOVE,
 GEORGE WELLS FITZ,

to be members of the Administrative Board
 of the Lawrence Scientific School,
 September 30, 1895.

JOHN HENRY BEALE,
 IRA NELSON HOLLIS,
 EDWARD HICKLING BRADFORD,
 WILLIAM HOOPER,
 PERRY DAVIS TRAFFORD,
 WILLIAM ALLEN BROOKS,

to be a Committee on the Regulation of
 Athletic Sports, Sept. 30, 1895.

REGINALD ALDWORTH DALY, to be Instructor in Geology, September 30, 1895.
 WILLIAM GUILD HOWARD, to be Instructor in German, September 30, 1895.
 EDWARD VERMILYE HUNTINGTON, to be Instructor in Mathematics, September 30, 1895.

THOMAS AUGUSTUS JAGGAR, to be Instructor in Geology, September 30, 1895.
 FREDERICK HOLLISTER SAFFORD, to be Instructor in Mathematics, September 30, 1895.

ROBERT DECOURCY WARD, to be Instructor in Meteorology, September 30, 1895.
 JAMES KELSEY WHITTEMORE, to be Instructor in Mathematics, September 30, 1895.

WILLIAM GARRETT BROWN, to be Assistant in the Library, September 30, 1895.
 FRANK CARNEY, to be Assistant in the Library, September 30, 1895.

ALFRED CLAGHORN POTTER, to be Assistant in the Library, September 30, 1895.
 LEON STACY GRISWOLD, to be Assistant in Physical Geography, September 30, 1895.

WILLIAM ROBINSON LAMAR, to be Assistant in Chemistry, September 30, 1895.
HERBERT CAMP MARSHALL, to be Assistant in Political Economy, September 30, 1895.
BENJAMIN RAND, to be Assistant in Philosophy, September 30, 1895.
ARTHUR BLISS SEYMOUR, to be Assistant in the Cryptogamic Herbarium, September 30, 1895.
CHARLES AUGUSTUS SOCH, to be Assistant in Chemistry, September 30, 1895.
HENRY AUGUSTUS TORREY, to be Assistant in Chemistry, September 30, 1895.

WILLIAM EDWARD MCCLINTOCK, to be Instructor in Highway Engineering, June 10, 1895.
LIONEL SIMEON MARKS, to be Instructor in Mechanical Engineering, June 10, 1895.
WILLIAM VAUGHAN MOSES, to be Instructor in Drawing and Machine Design, June 10, 1895.
GEORGE FREDERICK NEWTON, to be Instructor in Designing and Drawing, June 10, 1895.
GEORGE STAPLES RICE, to be Instructor in Sanitary Engineering, June 10, 1895.
DANIEL LAWRENCE TURNER, to be Instructor in Surveying and Hydraulics, June 10, 1895.
VERNON AMES WRIGHT, to be Instructor in Descriptive Geometry and Stereotomy, June 10, 1895.
MARTIN BUEL TINKER, to be Assistant in Hygiene, June 10, 1895.
WALTER SAFFORD BURKE, to be Instructor in Mechanical Engineering, September 30, 1895.
STEPHEN UPSHUR HOPKINS, to be Assistant in Surveying, September 30, 1895.
ARTHUR NEWHALL JOHNSON, to be Instructor in Drawing, September 30, 1895.
HOWARD BURTON SHAW, to be Assistant in Electrical Engineering, September 30, 1895.
CHARLES JOSEPH TILDEN, to be Assistant in Drawing, September 30, 1895.

ARTHUR BLISS SEYMOUR, to be Assistant in the Herbarium, April 29, 1895.
JOHN GEORGE JACK, to be Lecturer at the Arnold Arboretum, April 29, 1895.
JAMES REVERDY STEWART, to be Assistant in Applied Zoölogy, June 18, 1895.

SAMUEL HOLMES DURGIN, to be Lecturer on Hygiene, June 10, 1895.
THEODORE WILLIS FISHER, to be Lecturer on Mental Diseases, June 10, 1895.
EDWARD MARSHALL BUCKINGHAM, to be Instructor in Diseases of Children, June 10, 1895.
ARTHUR TRACY CABOT, to be Instructor in Genito-Urinary and Clinical Surgery, June 10, 1895.
WILLIAM MERRITT CONANT, to be Instructor in Anatomy, June 10, 1895.
ELBRIDGE GERRY CUTLER, to be Instructor in the Theory and Practice of Physic, June 10, 1895.
WILLIAM WHITWORTH GANNETT, to be Instructor in Clinical Medicine, June 10, 1895.
GEORGE HAVEN, to be Instructor in Gynaecology, June 10, 1895.

- FRANK BURR MALLORY, to be Instructor in Pathology, June 10, 1895.
SAMUEL JASON MIXTER, to be Instructor in Surgery, June 10, 1895.
GEORGE HOWARD MONKS, to be Instructor in Clinical Surgery, June 10, 1895.
FRANZ PFAFF, to be Instructor in Pharmacology, June 10, 1895.
ABNER POST, to be Instructor in Syphilis, June 10, 1895.
HENRY PARKER QUINCY, to be Instructor in Histology, June 10, 1895.
EDWARD REYNOLDS, to be Instructor in Obstetrics, June 10, 1895.
HERMAN FRANK VICKERY, to be Instructor in Clinical Medicine, June 10, 1895.
FRANCIS SEDGWICK WATSON, to be Instructor in Genito-Urinary Surgery, June 10, 1895.
CHARLES FRANCIS WITHINGTON, to be Instructor in Clinical Medicine, June 10, 1895.
ALGERNON COOLIDGE, to be Clinical Instructor in Laryngology, June 10, 1895.
EDWARD COWLES, to be Clinical Instructor in Mental Diseases, June 10, 1895.
THOMAS AMORY DEBLOIS, to be Clinical Instructor in Laryngology, June 10, 1895.
JOHN WOODFORD FARLOW, to be Clinical Instructor in Laryngology, June 10, 1895.
GEORGE WASHINGTON GAY, to be Clinical Instructor in Surgery, June 10, 1895.
JOHN HOMANS, to be Clinical Instructor in the Diagnosis and Treatment of Ovarian Tumors, June 10, 1895.
PHILIP COOMBS KNAPP, to be Clinical Instructor in Diseases of the Nervous System, June 10, 1895.
MORTON PRINCE, to be Clinical Instructor in Diseases of the Nervous System, June 10, 1895.
GEORGE LINCOLN WALTON, to be Clinical Instructor in Diseases of the Nervous System, June 10, 1895.
ALFRED LUDWIG THEODOR SCHAPER, to be Demonstrator of Histology and Embryology, June 10, 1895.
JOHN LINCOLN AMES, to be Assistant in Histology, June 10, 1895.
JOHN BAPST BLAKE, to be Assistant in Anatomy, June 10, 1895.
VINCENT YARDLEY BOWDITCH, to be Assistant in Clinical Medicine, June 10, 1895.
WILLIAM SOHIER BRYANT, to be Assistant in Otolary, June 10, 1895.
FREDERIC EDWARD CHENEY, to be Assistant in Ophthalmology, June 10, 1895.
WILLIAM MERRITT CONANT, to be Assistant in Clinical and Operative Surgery, June 10, 1895.
GEORGE ARTHUR CRAIGIN, to be Assistant in Diseases of Children, June 10, 1895.
EUGENE ANTHONY CROCKETT, to be Assistant in Otolary, June 10, 1895.
EUGENE ABRAHAM DARLING, to be Assistant in Bacteriology, June 10, 1895.
FREDERICK SPAULDING DELUE, to be Assistant in Histology, June 10, 1895.
EDWIN WELLS DWIGHT, to be Assistant in Clinical Surgery, June 10, 1895.
GEORGE HAVEN, to be Assistant in Obstetrics, June 10, 1895.
HENRY FOX HEWES, to be Assistant in Chemistry, June 10, 1895.
HENRY JACKSON, to be Assistant in Clinical Medicine, June 10, 1895.
JAMES OSCAR JORDAN, to be Assistant in Materia Medica, June 10, 1895.
AUGUSTUS SMITH KNIGHT, to be Assistant in Clinical Medicine, June 10, 1895.
ROBERT WILLIAMSON LOVETT, to be Assistant in Clinical Surgery, June 10, 1895.
FRED BATES LUND, to be Assistant in Anatomy, June 10, 1895.
JOHN HILDRETH MCCOLLOM, to be Assistant in Bacteriology, June 10, 1895.

SAMUEL JASON MIXTER, to be Assistant in Operative Surgery, June 10, 1895.
 GEORGE HOWARD MONKS, to be Assistant in Operative Surgery, June 10, 1895.
 JOHN CUMMINGS MUNRO, to be Assistant in Clinical Surgery, June 10, 1895.
 JAY BERGEN OGDEN, to be Assistant in Chemistry, June 10, 1895.
 CHARLES ALLEN PORTER, to be Assistant in Anatomy and in Operative Surgery,
 June 10, 1895.
 WILLIAM HERBERT PRESCOTT, to be Assistant in Pathology, June 10, 1895.
 EDWARD REYNOLDS, to be Assistant in Gynaecology, June 10, 1895.
 CHARLES LOCKE SCUDDER, to be Assistant in Clinical and Operative Surgery,
 June 10, 1895.
 GEORGE GRAY SEARS, to be Assistant in Clinical Medicine, June 10, 1895.
 MYLES STANDISH, to be Assistant in Ophthalmology, June 10, 1895.
 ARTHUR KINGSBURY STONE, to be Assistant in Bacteriology, June 10, 1895.
 JOHN BAKER SWIFT, to be Assistant in Gynaecology, June 10, 1895.
 EDWARD WYLLYS TAYLOR, to be Assistant in Pathology, June 10, 1895.
 BENJAMIN TENNEY, to be Assistant in Anatomy, June 10, 1895.
 PAUL THORNDIKE, to be Assistant in Clinical Surgery, June 10, 1895.
 CHARLES WENDELL TOWNSEND, to be Assistant in Obstetrics, June 10, 1895.
 ARTHUR HOWARD WENTWORTH, to be Assistant in Diseases of Children, June
 10, 1895.
 CHARLES POMEROY WORCESTER, to be Assistant in Chemistry, June 10, 1895.
 JAMES HOMER WRIGHT, to be Assistant in Pathology, June 10, 1895.
 WILLIAM ALLEN BROOKS, to be Demonstrator of Anatomy, June 25, 1895.

HARRY OLIVER BIXBY, ARTHUR WARREN ELDRED, ARTHUR JUDSON OLDHAM, ARTHUR HENRY STODDARD, FRED HOMER WOODCOCK,	}	to be Instructors in Mechanical Dentistry, June 18, 1895.
GEORGE HOWARD MONKS, to be Instructor in Surgical Pathology, June 18, 1895.		
GEORGE LINCOLN WALTON, to be Instructor in Neurology, June 18, 1895.		
EDWIN CARTER BLAISDELL, WALDO ELIAS BOARDMAN, FREDERICK BRADLEY, FORREST GREENWOOD EDDY, HENRY WEBSTER GILLETTE, ELLIS PROCTOR HOLMES, FREDERICK SYLVANUS HOPKINS, HARRY SNOW PARSONS, CHARLES ERNEST PERKINS, EZRA FLETCHER TAFT, FRANK TURNER TAYLOR, HENRY LAURISTON UPHAM,	}	to be Instructors in Operative Dentistry, June 18, 1895.
DWIGHT MOSES CLAPP, to be Clinical Lecturer in Operative Dentistry, June 18, 1895.		
WILLIAM HENRY POTTER, to be Clinical Lecturer in Operative Dentistry, June 18, 1895.		
JOSEPH TOTTEN PAUL, to be Demonstrator of Operative Dentistry, June 18, 1895.		

PATRICK WILLIAM MORIARTY, to be Demonstrator of Mechanical Dentistry, June 18, 1895.

NATHAN PRINDLE WYLLIE, to be Assistant Demonstrator of Operative Dentistry, June 18, 1895.

THEODORE HALLETT, to be Instructor in Mechanical Dentistry, June 25, 1895.

FREDERICK HUNTINGTON OSGOOD, to be Acting Dean of the School of Veterinary Medicine, September 24, 1895.

FRANK INGERSOLL PROCTOR, to be Instructor in Ophthalmology, September 24, 1895.

ALBERT JAMES SHELDON, to be Instructor in Meat Inspection, September 24, 1895.

WILLIAM ORISON UNDERWOOD, to be Lecturer on Warranty and Evidence, September 24, 1895.

GEORGE BROWN FOSS, to be Resident Hospital Surgeon, and Lecturer on the Diseases of Dogs, September 24, 1895.

LESTER HEARD HOWARD, to be Clinical Lecturer, September 24, 1895.

WESLEY LEVI LABAW, to be Demonstrator of Anatomy, and Assistant Surgeon, September 24, 1895.

Table of Schools and Colleges from which young men actually entered Harvard College from 1886 to 1895 inclusive, with the number that entered from each institution in each year. Special students are not included. An asterisk (*) indicates a public school, a dagger (†) an endowed school.

SCHOOL OR COLLEGE.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
* Acadia College, Wolfville, N. S.	1	1	1	.	1	.	1	1
†Adams Academy, Quincy	2	10	2	9	2	7	7	3	4	6
Adelbert College, Cleveland, O.	1	1	.	1	.	.
Alabama Polytechnic Institute, Auburn, Ala.	1	.	.
†Adelphi Academy, Brooklyn, N. Y.	1	1	.	.	.	.	.	.	.	.
†Albany Academy, Albany, N. Y.	2	2	.	2	1	2	2	1
*Albany, N. Y., High School	1
Albany, N. Y., State Normal School	1	.	.	.	.	.
Albion College, Mich.	1	.	.	.	.	.	.
Alleghany College, Meadville, Pa.	2	.	.
Allen School, Newton	2	.	1	.	1	.	.	.	.
Allen School, New York	1	.
Amherst College	2	1	.	1	3	.	1	1	4	2
Andover Theological Seminary	1	.	.	1	1	.	.	.	.	.
Antioch College, Yellow Springs, O.	1	.	.	.
Appleton Academy, New Ipswich, N. H.	1	1	.	.	.
*Arlington, Cotting High School	2	.	3	.	1	1	3	.
Arlington Heights Summer School	1	.	.	.
Arms Academy, Shelburne Falls	1	.	.	.	.
Atlanta University, Georgia	1	.	.	.	.	.
*Auburn, Me., Edward Little High School	1	.	.	.	1	.	.	.
*Auburn, N. Y., High School	1	.	.	.	.	.	.
*Augusta, Me., Coney High School	1	.	.	.	.	1	1	1	.
Augustana College, Rock Island, Ill.	1	.	.	.	1	.	1	.	.	.
Baldwin University, Berea, O.	2	.	.	.
*Bangor, Me., High School	1	.
*Barnstable High School	1	.	.
Bates College, Lewiston, Me.	1	.	.	.
Belmont, N. Y., Academy	1	.	.	.
Belmont School, Belmont, Cal.	4	2	.	1	.	2	2	2	1	.
Belmont School, Belmont, Mass.	2	1	4	4	1	1
Beloit, Wis., College Academy	1	.	.	.
Berkeley School, Boston	1	1	5	3	1	2	1	3	1
Berkeley School, New York	2	6	4	4	1	1	5	4	5	2
Berkeley School, Providence, R. I.	1	.	.	.	.	.	.
†Berwick Academy, So. Berwick, Me.	1	.	.	.	.	.
Bethany College, Lindsborg, Kan.	1	.	.	.
*Beverly, High School	1	.	.	.
Beverly School, Beverly, Mass.	1	.	.	.
Blackburn University, Carlinville, Ill.	1	.	.	.	.
Boston College	1	.	.	.	.	.	.
*Boston English High School	4	5	4	7	4	3	6	3	.
*Boston Latin School	25	31	25	28	25	25	26	34	24	23
Boston University	2	1	.	4	.	1	3	1	.	.
Bowdoin College, Brunswick, Me.	1	.	.	2	.	2
*Bradford High School	1	.	.	.
†Brewster Free Academy, Wolfboro, N. H.	2	.	1	.	.
*Bridgeport, Conn., High School	1	.	1	.

SCHOOL OR COLLEGE.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Bridgewater, State Normal School	1				
†Bristol Academy, Taunton	1							
*Brockton High School	3	1
†Bromfield School, Harvard	1	
*Brookline High School	2	.	1	4	.	.	1	5	3	6
*Brooklyn, N. Y., High School	2	.	.	.	2	1
Brooklyn, N. Y., Latin School
Brooklyn Polytechnic Institute, Brooklyn, N. Y.	2	1	1	1	1	1	2	2	1	3
Brooks Academy, Cleveland, O.	1				
Brown, H. H., Private School, Philadelphia, Pa.	.	.	.	1	.	.	.	.	.	.
Brown University, Providence, R. I.	1	1	.	1	.	2	
Browne & Nichols, Private School, Cambridge	3	3	6	11	6	13	6	10	9	3
Buchtel College, Akron, O.	1	.	.	.
Bucknell University, Lewisburg, Pa.	1	.	.	2	1	.	.	.
*Buffalo, N. Y., High School	2	.	1	4	.	.	.
Buffalo, N. Y., Latin School	1	1	.	.	.	.	.	.
*Buffalo, N. Y., State Normal School	1	.	.	.	.	.	.	.
Bulkeley School, New London, Conn.	1
*Burlington, Vt., High School	1	.	.	.	.
†Burr & Burton Seminary, Manchester, Vt.	1	.	.	.	.	.	.
*Calais, Me., High School	1
*Cambridge Latin School	14	4	14	14	13	23	11	18	19	19
Canandaigua, N. Y., Academy	1	.	.
Carleton College, Northfield, Minn.	1	2	.	.	.	.	.
Casa Piedra School, Nordhoff, Cal.	1	.
Catskill, N. Y., Free Academy	1
Cazenovia, N. Y., Seminary	1	.	1	.	.
Centre College, Danville, Ky.	1	.	.	.	.	1	.	1	.
Chaffey College, Ontario, Cal.	1	.	.
*Charleston, S. C., High School	1	.
*Charlestown High School	1
Chauncy Hall School, Boston	2	1	1	.	4	3	3	4	1	2
*Chelsea High School	2	2	2	4	1	6	2	.	3	2
Chettenham Academy, Ogontz, Pa.	1	.	.	.	.
*Chicago, Ill., High School	1	.	.	.	1	4	.	.	1
*Cincinnati, O., Hughes High School	2	.	1	1	.	2
*Cincinnati, O., Woodward High School	1	.	1	1	.	.	1	.	.	3
Claverack, N. Y., Academy	1	.	.	.
*Cleveland, O., Central High School	3	.	.	.	1	1	1	.	.	2
*Cleveland, O., West High School	1	1	.	.	1	.	.	.	3
*Clinton High School	1
Colby University, Waterville, Me.	1	.	2	.	1
Colgate University, Hamilton, N. Y.
College of the City of New York	2	1	1	.	1	.	.	.
College of Emporia, Kan.	1	.	.	.	.
College of Charleston, S. C.	1	.	.	.	.	.	.
College of New Jersey, Princeton, N. J.	1	.	.	1	.	.	.	.
Colorado College, Colorado Springs, Colo.	1	.	.	.	.	1	.	1	.
Columbia College, New York	1	1	.	.	.	1	.	1
Columbia College School of Mines, New York	1	.	.	.	.	.	.	.
Columbia Grammar School, New York	1	1	1
Columbian University, Washington, D. C.	1	1	.	.	.	.	1	.	.
*Columbus, O., High School	1	.
*Concord High School	2	.	1	2	2	4	1	1
*Concord, N. H., High School	1	.
Concord Home School	1	1	1	.	.
Condon School, New York	3
Cornell College, Mt. Vernon, Ia.	1	.	.	.	.	.

SCHOOL OR COLLEGE.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Cornell University, Ithaca, N. Y.	1	.	.	1	1	1	1	1		
†Cushing Academy, Ashburnham	1	.	.	.	.	.	.	.
Cutler Academy, Colorado Springs, Colo. . . . .	.	.	.	.	.	1				
Cutler, A. H., Private School, New York	2	2	1	4	3	1	1	9	9	4
Cutler, Edward H., Private School, Newton . . . . .	.	.	2	5	7	4	3	4	4	2
Dalhousie College, Halifax, N. S. . . . .	.	.	1	3	2	2	2	3		
Dalzell's Private School, Worcester . . . . .	.	.	.	.	3	2	4	1	4	
Dartmouth College, Hanover, N. H. . . . .	.	.	1	.	4	.	3	1		
*Dayton, O., High School . . . . .	.	.	.	.	1	.	1			
Dearborn Morgan School, Orange, N. J.	1	.	3	.	.	.	.	.
*Dedham High School . . . . .	.	.	.	.	.	.	.	.	2	
†Deerfield Acad. & Dickinson High Sch. Deerfield	1	.	.	.	1	.	2	.		
DeLancey School, Philadelphia, Pa. . . . .	.	.	.	.	.	2	.	1	2	
Denison University, Granville, O. . . . .	.	.	.	.	1	1	2	.	1	
*Denver, Colo., High School	2	1	.	.	.	2	2			
Dickinson College, Carlisle, Pa. . . . .	.	.	.	1	1	.	.	.		
Dickinson Seminary, Williamsport, Pa. . . . .	.	.	.	.	.	.	.	.	1	
*Dorchester High School . . . . .	.	.	.	1	.	1	.	1		
*Dover, N. H., High School . . . . .	.	.	.	.	1	.	.	.		
Drisler School, New York . . . . .	.	.	.	.	.	.	.	.	1	
Drury College, Springfield, Mo. . . . .	.	1	.	.	.	.	1	.	1	
†Dummer Academy, South Byfield . . . . .	.	.	.	.	.	1	.	.		
Dwight School, New York . . . . .	.	.	.	1	.	1	.	1		
Earlham College, Richmond, Ind. . . . .	.	.	.	.	.	1	1	.		
*East Boston High School . . . . .	.	.	.	.	.	.	.	1		
*East Denver High School . . . . .	.	.	.	.	.	1	.	.		
Bayrs, Wm. N., Private School, Boston . . . . .	.	.	2	.	.	.	.	.
Edgeborough, Guilford, England . . . . .	.	.	.	.	.	.	.	.	1	
*Elkhart, Ind., High School	1	.	.	.	.	.	.	.
*Ellsworth, Me., High School	1	.	.	.	.	.	.	.
Emerson Institute, Washington, D. C. . . . .	.	1	.	.	1	1	.	.		
Eminence College, Ky. . . . .	.	.	1	.	.	.	.	.
Emporia University, Emporia, Kan. . . . .	.	.	.	.	1	.	.	.		
Englewood School, Englewood, N. J. . . . .	.	.	.	.	.	1	.	.		
Episcopal Academy, Philadelphia, Pa. . . . .	.	.	.	.	.	.	.	1		
Episcopal Theological School, Cambridge	1	.	1	.	.	.	.	.
Eureka College, Eureka, Ill. . . . .	.	1	.	1	3	1	1	.		
*Evanston, Ill., High School . . . . .	.	.	.	.	.	.	.	.	1	
*Everett High School . . . . .	.	.	.	1	.	.	.	.
Everson, D. S., Collegiate School, New York	1	.	.	.	.	.	.	.
*Fall River, B. M. C. Durfee High School . . . . .	.	1	1	1	1	4	5	1	2	
*Farmington, Conn., State Normal School . . . . .	.	.	.	.	.	.	.	.	1	
Fish, C. E., Private School, Worcester . . . . .	.	.	1	5	.	.	.	.
Fisk University, Nashville, Tenn. . . . .	.	1	.	.	.	.	.	.
*Fitchburg High School	1	1	1	.	1	.	.	.		
*Flushing, L. I., High School . . . . .	.	.	.	.	1	.	.	.		
Fort Hill School, Rochester, N. Y. . . . .	.	1	.	1	.	.	.	.
*Framingham High School . . . . .	.	.	.	1	.	.	.	.
Frankfurt Gymnasium, Germany . . . . .	.	1	.	.	.	.	.	.
Franklin College, Dresden, Germany . . . . .	.	.	.	.	.	.	.	1		
Franklin School, Cincinnati, O. . . . .	.	.	.	.	.	1	.	1	4	
†Friends' Academy, New Bedford	1	1	2	1	.	2	.	1	1	
Friends' Central School, Philadelphia, Pa. . . . .	.	.	.	.	.	.	.	.	1	
Friends' School, Wilmington, Del. . . . .	.	.	.	.	1	.	.	.		
Friends' Seminary, New York . . . . .	.	.	.	.	.	.	.	1		
Frye's Private School, Boston . . . . .	.	.	.	.	.	.	1	.		
Gardner High School . . . . .	.	1	.	.	.	.	.	.
*Geneseo Normal School, N. Y. . . . .	.	.	.	.	1	.	1	.		

SCHOOL OR COLLEGE.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
*Lancaster High School . . . . .	.	.	1	.	.	.	.	.	.	1
Laurel Hall College, San Mateo, Cal. . . . .	.	.	.	.	1	.	.	.	.	.
*Lawrence High School	1	1	.	.	.	.	.	.	.	.
Lawrence Scientific School, Cambridge . . . . .	.	1	2	4	3	3	7	4	8	9
Lawrence University, Appleton, Wis.	1	.	.	.	.	.	.	.	.	.
†Lawrenceville School, N. J. . . . .	.	3	1	.	.	1	1	.	1	.
Leal's School, Plainfield, N. J. . . . .	.	.	.	.	.	.	.	3	3	.
Leland Stanford Jr. University, Palo Alto, Cal. . . . .	.	.	.	.	.	.	2	4	.	.
*Leominster, Field High School . . . . .	.	.	2	.	.	2	.	.	.	.
*Lexington High School . . . . .	.	.	1	.	.	2	.	.	.	.
*Lincoln High School . . . . .	.	.	.	.	.	.	.	1	1	.
Lombard University, Galesburg, Ill. . . . .	.	.	.	.	.	1	.	1	.	.
*Louisville, Ky., Male High School . . . . .	.	1	.	.	1	.	.	.	.	.
*Lowell High School	5	1	4	2	1	.	2	3	.	2
*Lyons Township High School, La Grange, Ill. . . . .	.	.	.	.	.	.	.	.	.	1
*Lynn High School	2	2	1	3	1	1	4	2	7	3
†McCormick Institute, Mt. Vernon, N. H. . . . .	.	.	1	.	2	.	.	1	.	.
McGill University, Montreal, Canada . . . . .	.	.	.	.	.	.	.	.	1	.
Madison University, Hamilton, N. Y. . . . .	.	.	1	.	2	.	.	.	.	.
*Malden High School . . . . .	.	.	.	1	.	.	2	1	3	2
Marietta College, Ohio . . . . .	.	.	.	.	2	.	.	.	.	.
*Marlboro' High School	1	.	.	1	.	.	.	.	.	.
Marlborough St. School, Boston . . . . .	.	1	.	.	.	.	.	.	.	.
Marston's University School, Baltimore, Md. . . . .	.	1	.	.	1	.	.	.	.	.
Maryville College, Maryville, Tenn. . . . .	.	.	.	.	.	.	.	1	.	.
Mass. Agricultural College, Amherst, Mass. . . . .	.	.	.	.	.	.	.	.	1	.
Mass. Institute of Technology, Boston . . . . .	.	.	.	.	.	.	.	1	3	3
*Medford High School	1	.	.	2	1	.	1	1	2	2
*Melrose High School . . . . .	.	.	2	1	.	1	1	.	2	2
†Merrimac High School . . . . .	.	1	.	.	.	.	.	.	.	.
*Methuen High School . . . . .	.	.	.	.	1	.	.	.	.	.
Miami University, Oxford, O. . . . .	.	.	.	.	.	1	.	.	.	.
*Michigan State Normal School, Ypsilanti . . . . .	.	1	.	.	.	.	.	.	.	.
Middlebury College, Vt. . . . .	.	.	.	1	.	1	.	.	1	.
*Milford High School	2	.	.	.	.	.	.	.	.	.
†Milton Academy, Milton . . . . .	.	.	.	.	.	3	2	2	1	8
*Milton High School . . . . .	.	.	.	.	.	.	.	1	.	.
Milwaukee, Wis., Academy	1	1	.	1	.	.	.	.	.	.
*Milwaukee, Wis., High School . . . . .	.	1	.	2	.	3	.	1	.	.
Missouri State Normal School, Warrensburg, Mo. . . . .	.	.	.	.	.	.	2	.	.	.
Mohegan Lake Academy, Peekskill, N. Y. . . . .	.	.	.	.	.	.	.	1	.	.
Monmouth College, Ill. . . . .	.	.	.	.	1	.	.	.	.	.
*Montclair, N. J., High School . . . . .	.	.	.	.	1	.	1	.	.	.
Morgan Park Academy, Morgan Park, Ill. . . . .	.	.	.	.	.	.	.	.	1	.
Morse, J. H., Private School, New York	2	1	2	1	.	.	1	.	.	1
Mt. Allison College, Sackville, N. B.	1	.	.	.	1	1	2	1	.	5
Mt. Union College, Alliance, O. . . . .	.	.	.	.	.	.	.	.	.	1
*Nashua, N. H., High School . . . . .	.	.	.	.	.	1	.	.	.	.
*Nashville, Tenn., State Normal College . . . . .	.	1	.	.	.	.	.	.	.	.
*Natick High School	2	.	.	.	.	.	.	.	.	.
National University . . . . .	.	.	.	.	.	1	.	.	.	.
*Needham High School	1	.	.	.	.	.	.	1	.	.
*Newark, N. J., High School . . . . .	.	.	.	1	.	.	.	.	.	.
*New Bedford High School . . . . .	.	.	.	.	.	1	1	.	.	1
*Newburyport, Brown High and Putnam Schools	1	.	1	1	.	.	.	1	.	.
†New Church School, Waltham . . . . .	.	.	.	.	1	.	2	.	.	.
*Newport R. I., Rogers High School	6	1	3	1	.	1	2	.	1	3
*Newton High School, Newtonville	5	2	4	4	5	7	5	4	9	11

SCHOOL OR COLLEGE.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
New Windsor College, New Windsor, Md. . . . .	.	.	.	.	.	1	1			
Nichols, Wm., Private School, Boston	1	5	.	2	5	2	3			
Nichols, Wm., Buffalo, N. Y.										3
Noble & Greenough, Private School	12	8	12	9	8	4	5	11	8	8
*North Adams, Drury High School										1
*Northampton High School							1			1
*North Attleboro' High School			1							
Northern Indiana Normal School						1				1
Northwestern University, Evanston, Ill.			1		3	1				
†Norwich, Conn., Free Academy									2	
*Norwich, Conn., High School						1				
Oberlin Academy, Oberlin, O.								1		
Oberlin College, Oberlin, O.	2	1	1		1	1			1	1
Ohio State University, Columbus, O.						2	1			
Ohio Wesleyan University, Delaware, O.	1	6			1	1	4	4		
Olivet College, Olivet, Mich.									1	
*Omaha, Neb., High School					1	3			1	
Oswego, N. Y., Free Academy									1	1
*Oswego, N. Y., High School						1				
Ottawa University, Ottawa, Can.							1			
Otterbein University, Westerville, O.						1			2	
Palatinate College						1				
Parsons College, Fairfield, Ia.								1		
Park Institute, Rye, N. Y.	1									
*Pawtucket, R. I., High School			1			2				
*Peabody High School								1		
*Philadelphia, Pa., High School		1							1	
†Phillips Academy, Andover	10	6	14	12	12	13	17	18	20	19
†Phillips Academy, Exeter, N. H.	16	19	22	20	28	34	26	23	20	20
Pingry School, Elizabeth, N. J.										1
Pine Hill Theological College, Halifax, N. S.					1					
†Pinkerton Academy, Derry, N. H.			1	1					1	
*Pittsburgh, Pa., Central High School			1	1					1	
*Pittsfield High School						1	1			
*Portland, Me., High School	3	2		1	2		3	1	2	6
*Portsmouth, N. H., High School					1			2	1	
Powder Point School, Duxbury									1	
†Proctor Academy, Andover, N. H.										1
*Providence, R. I., High School			1		1					1
Providence, R. I., University Grammar School					1		1			
Putnam's School, Washington, D. C.						1			1	
*Reading High School								1		
*Redlands, Cal., University High School										1
Rideoute, Miss C. L., Private School, Boston						3	1		2	1
Ripon College, Wis.					1					
Riverview Academy, Poughkeepsie, N. Y.			2	2		2			1	5
†Rochester, N. Y., Free Academy			1			1				
Rochester, N. Y., Theological Seminary					1					
†Rockland High School								1		3
*Romeo, Mich., High School				1						
*Roxbury High School										1
†Roxbury Latin School	12	19	12	10	12	12	12	18	20	17
Rugby Academy, St. Louis, Mo.									1	
Rugby Grammar School, New York						1				
Rutger's Preparatory School, New Brunswick, N. J.							1			
Sach's Collegiate Institute, New York	3	1	2	8	2	4	5	11	1	2
St. Albans Academy, Vt.							1			
St. Austin's School, West New Brighton, N. Y.							1		1	

SCHOOL OR COLLEGE.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
St. Johnsbury, Vt., Academy	1	1	.	.	1	.	.	.	.	.
St. John's School, Manlius, N. Y.	2	.	.	.	.	.	.	.	.	.
†St. John's School, Presque Isle, Me. . . . .	.	1	.	.	.	.	.	.	.	.
St. Lawrence University, Canton, N. Y. . . . .	.	.	1	.	.	1	.	.	.	.
*St. Louis, Mo., High School . . . . .	.	.	.	.	.	.	1	.	.	.
†St. Mark's School, Southboro	6	4	3	3	5	6	3	6	7	8
*St. Paul, Minn., High School . . . . .	.	2	.	.	.	.	2	.	.	3
†St. Paul's School, Concord, N. H.	5	10	12	8	12	13	17	15	8	19
†St. Paul's School, Garden City, L. I. . . . .	.	.	.	.	.	1	.	2	.	.
St. Stephen's College, Annandale, N. Y. . . . .	.	.	.	.	.	1	.	1	.	.
*Salem High School	3	.	1	4	.	5	.	5	6	5
Salina, Kan., Military School . . . . .	.	.	.	.	.	.	.	1	.	.
*Sandwich High School . . . . .	.	.	.	.	.	.	.	.	1	.
San Francisco, Cal., Boys' High School	1	.	.	.	.	.	.	.	.	.
Shattuck School, Faribault, Minn. . . . .	.	.	.	.	.	.	.	1	.	.
Shortlidge's Media Academy, Pa.	3	2	.	1	.	.	.	.	.	.
Simpson College, Indianola, Ia. . . . .	.	.	.	.	.	1	.	.	.	.
Smith Academy, St. Louis, Mo.	1	1	1	2	.	.	.	1	3	5
Smith, Miss K. V., Private School, Cambridge . . . . .	.	.	.	.	.	.	.	2	.	.
*Somerville, High School	4	5	5	5	3	8	6	9	3	3
Southwestern Preb. Univ., Clarkville, Tenn. . . . .	.	.	.	.	.	.	.	.	1	.
*Springfield High School . . . . .	.	.	.	.	2	.	3	2	3	3
*Springfield, Ill., High School . . . . .	.	.	1	.	.	.	.	.	.	.
Spring Hill College, near Mobile, Ala.	1	.	.	.	.	.	.	.	.	.
State University of Iowa, Iowa City, Ia. . . . .	.	.	.	1	.	.	.	.	.	.
Staten Island Academy, Stapleton, N. Y. . . . .	.	.	.	.	.	.	.	1	1	.
Stevens Institute, Brooklyn, N. Y. . . . .	.	.	.	.	.	1	.	.	.	.
Stone's Private School, Boston . . . . .	.	.	.	.	.	3	.	.	4	2
Swarthmore, Pa., College . . . . .	.	.	1	1	.	.	.	1	1	.
*Syracuse, N. Y., High School . . . . .	.	1	.	.	.	.	.	.	.	.
Syracuse University, N. Y. . . . .	.	1	.	.	.	2	1	1	1	1
Tabor Academy, Marion . . . . .	.	.	.	1	.	.	1	.	1	.
*Taunton High School . . . . .	.	.	2	.	.	3	4	2	1	4
†Thayer Academy, Braintree	1	.	.	.	.	1	1	1	.	.
Thornton Academy, Saco, Me. . . . .	.	.	.	.	.	.	.	.	.	1
*Topeka, Neb., High School . . . . .	.	.	.	.	1	.	.	.	.	.
Trinity College, Hartford, Conn. . . . .	.	.	.	1	.	.	.	.	3	.
Trinity School, Tivoli, N. Y.	1	.	.	.	.	.	.	.	.	.
*Troy, N. Y., High School	1	.	.	.	.	.	.	.	.	.
Tufts College, College Hill . . . . .	.	1	.	1	1	.	.	.	1	.
Tulane University, New Orleans, La. . . . .	.	.	.	.	.	.	.	.	.	2
†Union Academy, Belleville, N. Y. . . . .	.	.	.	.	1	.	1	.	1	.
Union College, Schenectady, N. Y. . . . .	.	.	.	.	.	.	.	1	.	.
University of Alabama, Ala. . . . .	.	.	.	.	1	.	.	.	.	.
University of California, Berkeley, Cal. . . . .	.	.	1	.	2	3	1	1	.	.
University of Chicago, Ill. . . . .	.	.	.	.	.	.	.	.	2	1
University of Cincinnati, O. . . . .	.	.	.	.	.	.	.	1	.	.
University of the City of New York . . . . .	.	.	.	.	1	.	.	.	.	.
University of Durham, England . . . . .	.	.	.	.	.	1	.	.	.	.
University of Georgia, Athens, Ga. . . . .	.	.	1	.	.	.	.	.	1	.
University of Kansas, Lawrence, Kan. . . . .	.	.	.	.	3	3	1	3	5	2
University of Michigan, Ann Arbor, Mich.	2	1	.	2	.	1	1	.	.	.
University of Minnesota, Minneapolis, Minn. . . . .	.	.	.	.	.	.	1	2	.	1
University of Mississippi, University, Miss. . . . .	.	.	.	.	.	.	1	.	.	.
University of Missouri, Columbia, Mo. . . . .	.	.	.	.	.	1	.	.	.	.
University of Nashville, Tenn. . . . .	.	.	.	.	.	.	1	.	.	.
University of Nebraska, Lincoln, Neb. . . . .	.	.	.	.	.	.	.	1	.	.
University of New Brunswick, Fredericton, N. B. . . . .	.	.	1	.	2	.	1	.	1	.

SCHOOL OR COLLEGE.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
University of North Carolina, Chapel Hill, N. C.	1					
University of Oregon, Eugene City, Ore.	.	.	1	.						
University of Pennsylvania, Philadelphia, Pa.	1	1	.	1	.	2	1	.	1	
University of Rochester, N. Y.	.	1	1	.						
University of South Carolina, Columbia, S. C.	1				
University of State of Missouri, Columbia, Mo.	1					
University of Toronto, Can.	1	
University of Vermont, Burlington, Vt.	.	.	1	.						
University of Virginia, Va.	.	.	1	.						
University of Washington, Seattle, Wash.	1	
University of West Virginia, Morgantown, W. Va.	1	.	1		
University of Wisconsin, Madison, Wis.	2	2	.		1
University of Wooster, O.	2	1	.	1		
University School, Baltimore, Md.	1	.				
University School, Chicago, Ill.	.	.	3	.	.	3	2	3	3	4
University School, Cleveland, O.	2	1		
University School, Washington, D. C.		1
Upper Iowa University	1	1			
Urban School, San Francisco, Cal.	.	2	.	1	.					
U. S. Naval Academy, Annapolis, Md.	1					
Vanderbilt University, Nashville, Tenn.	.	.	.	2	.	1				
Vermont Methodist Seminary, Montpelier, Vt.	1				
*Wakefield High School	.	.	1	.	1	1	1	.	1	
Wake Forest, N. C., College	1				
Waltham High School	.	1	.	1	1	1	4	2	2	
Warsaw, N. Y., Union School	1	.	.	.	.	.	.	.	.
Washburn College, Topeka, Kan.	.	.	.	1	.					
*Washington, D. C., High School	.	.	.	2	3	1	1	1		
*Washington Co., Vt., Grammar School	1	.	.	.	.	2	1			
Washington University, St. Louis, Mo.	1	1	.	.	.	2	1			
*Watertown High School	.	.	.	1	1	3	1	.	2	
*Wellesley High School	.	.	.	1	.					
Wesleyan Academy, Wilbraham	1	1				
Wesleyan University, Middletown, Conn.	.	.	.	2	.	3	1	2	2	
*Westboro High School	1	
†Western Reserve Academy, Hudson, O.	.	1	.	.	.	.	.	.
Westminster School, Dobbs Ferry, N. Y.	1	1		
*Weymouth High School	1			
White and Sykes, Franklin School, Cincinnati, O.	3	2	3	2	3	.	.	.		1
*Wichita, Kansas, High School		
William Jewell College, Liberty, Mo.	1				
†William Penn Charter School, Philadelphia	1	1	1	3	1	1	4	1	3	
Williams College, Williamstown	.	1	.	.	2	2	3	2	1	
†Williston Seminary, East Hampton	4	.	.	1	1	2	1	.	1	
Wilson and Kellogg, Private School, New York.	.	1	2	2	.	.	2			
*Winchester High School	.	1	1	.	.	1	2	.	3	
*Winsted, Conn., High School	.	.	1	.	.	.	.	.
Wisconsin Normal School, Milwaukee, Wis.	1				
Wittenberg University, Colorado Springs, O.	1	.	1	1	
*Woburn High School	.	2	1	.	1	.	1	.		
†Worcester Academy	1	.	1	2	4	3	4	3	2	
*Worcester High School	2	2	1	3	4	4	1	5	5	

AGE OF STUDENTS WHO ENTERED THE FRESHMAN CLASS OF HARVARD COLLEGE 1865—1895 INCLUSIVE.

Year	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31	32-33	44-46	Average Age.	No. adm.*
1865		5	19	51	28	23	9	1	5		1		1							18 yrs. 8 $\frac{1}{2}$ mos.	143
1866		6	19	38	46	23	8	9	3	1										18 " 2 $\frac{3}{4}$ "	144
1867			22	56	55	24	7	9	3	1	1									18 " 5 $\frac{1}{2}$ "	178
1868			16	48	37	22	13	2	1	2										18 " 5 $\frac{1}{2}$ "	141
1869		2	15	49	52	22	11	6						1	1					18 " 5 $\frac{1}{2}$ "	159
1870		3	19	76	53	29	11	4	4	1	1									18 " 4 $\frac{1}{2}$ "	203
1871		6	24	59	62	28	16	4	1	1										18 " 3 $\frac{1}{2}$ "	201
1872		2	20	51	65	29	12	4	2	1	2			1						18 " 5 $\frac{1}{2}$ "	188
1873	1	2	19	52	76	43	17	11	3	4	2	5								18 " 10 $\frac{3}{4}$ "	236
1874	1	1	12	78	93	49	10	7	3	4	2	2		1						18 " 6 $\frac{3}{4}$ "	202
1875	1	1	12	58	60	53	20	7	2	2	1		1							18 " 9 "	258
1876		1	12	52	80	53	23	9	6	3	1									18 " 9 $\frac{3}{4}$ "	217
1877	2	2	16	52	78	45	22	7	9		1									18 " 9 $\frac{1}{2}$ "	245
1878	2	14	52	78	73	55	31	10	8	1	1									18 " 11 "	230
1879		1	16	49	86	53	19	15	4	1	1	1	1	1						18 " 11 $\frac{1}{2}$ "	248
1880		1	12	52	84	53	24	9	3	4	1	2								18 " 11 $\frac{1}{2}$ "	247
1881		3	10	38	73	55	31	10	8	1	1	2								19 "	230
1882	1	3	11	58	89	60	28	12	4	5	1	2				1				19 "	275
1883			17	65	100	61	23	7	7	2	2	1								18 " 9 $\frac{1}{2}$ "	285
1884	1		12	63	90	72	29	8	4	1	5	1					1	(45)		18 " 10 $\frac{1}{2}$ "	286
1885	2		10	63	89	56	40	6	4	4	2	1					1	(44)		19 " 1 $\frac{1}{2}$ "	281
1886		4	14	64	116	67	29	12	3	3	2	1	2	2						18 " 11 $\frac{1}{2}$ "	321
1887			8	71	108	87	26	7	12	5	4	3	4	1						19 " 2 $\frac{1}{2}$ "	333
1888			11	58	123	68	42	19	8	5	4	3	4	3						19 " 3 $\frac{1}{2}$ "	352
1889			1	14	88	124	96	32	12	9	9	1	2	4						19 " 7 $\frac{1}{2}$ "	388
1890	1	2	14	64	129	102	37	26	6	9	10	2	2	1	2					19 " 4 $\frac{1}{2}$ "	408
1891		2	24	82	141	97	40	17	13	7	3	3	4	1	1					19 " 2 $\frac{1}{2}$ "	441
1892		2	19	88	155	120	56	20	12	4	5	5	2	1						19 " 0 $\frac{1}{2}$ "	487
1893		2	6	98	159	100	45	15	7	5	5	2	1	1	1					19 " 0 $\frac{1}{2}$ "	447
1894		3	12	82	134	124	40	16	6	6	3	2	1							18 " 11 $\frac{1}{2}$ "	428
1895		2	16	91	168	106	29	12	8	4		2								18 " 9 "	438

* On the assumption that all who ever joined each class were admitted as Freshmen.

HARVARD UNIVERSITY.

ATHLETE'S CERTIFICATE OF ELIGIBILITY.

RULE 1. No one shall be allowed to represent Harvard University in any public contest, either individually or as a member of any team, unless he can satisfy the Committee on the Regulation of Athletic Sports that he is, and intends to be throughout the College year, a *bona fide* member of the University, taking a full year's work.

RULE 2. No student on probation can take part in any public athletic contest. A student who is dropped for neglect of his studies into a lower class shall be debarred from taking part in any intercollegiate contests until the end of the next academic year, or until he produces a Faculty certificate that he has made up all the deficiencies which stand in the way of his restoration to his original class.

RULE 3. No one who is not a regular student in the College or Scientific School, and no regular student in either of these departments who has ever played in any intercollegiate contest upon a class or university team of any other college, shall play upon a Harvard team until he has resided one academic year at the University and passed the annual examinations upon a full year's work.

RULE 4. No student shall be allowed to represent Harvard University in any public athletic contest, either individually or as a member of any team, who, either before or since entering the University, shall have engaged for money in any athletic competition, whether for a stake, or a money prize, or a share of the entrance fees or admission money; or who shall have taught or engaged in any athletic exercise or sport as a means of livelihood; or who shall at any time have received for taking part in any athletic sport or contest any pecuniary gain or emolument whatever, direct or indirect, with the single exception that he may have received from the College organization, or from any permanent amateur association of which he was at the time a member, the amount by which the expenses necessarily incurred by him in representing his organization in athletic contests exceeded his ordinary expenses.

RULE 5. No student, whether he has represented one or more colleges shall take part in intercollegiate contests for more than four years; and this period shall begin with the year in which as a player upon a university team he first represented any college. In reckoning the four years, the year of probation mentioned in Rule 3 shall be excluded, and also any year lost to a student by illness.

I, _____ of the _____ class
in Harvard _____ hereby declare that
I am a *bona fide* student and an amateur, and am eligible in all
other respects, according to the letter and spirit of the foregoing
rules.

Signed in my presence,

189

NUMBER OF ORDINARY DEGREES IN 1895.

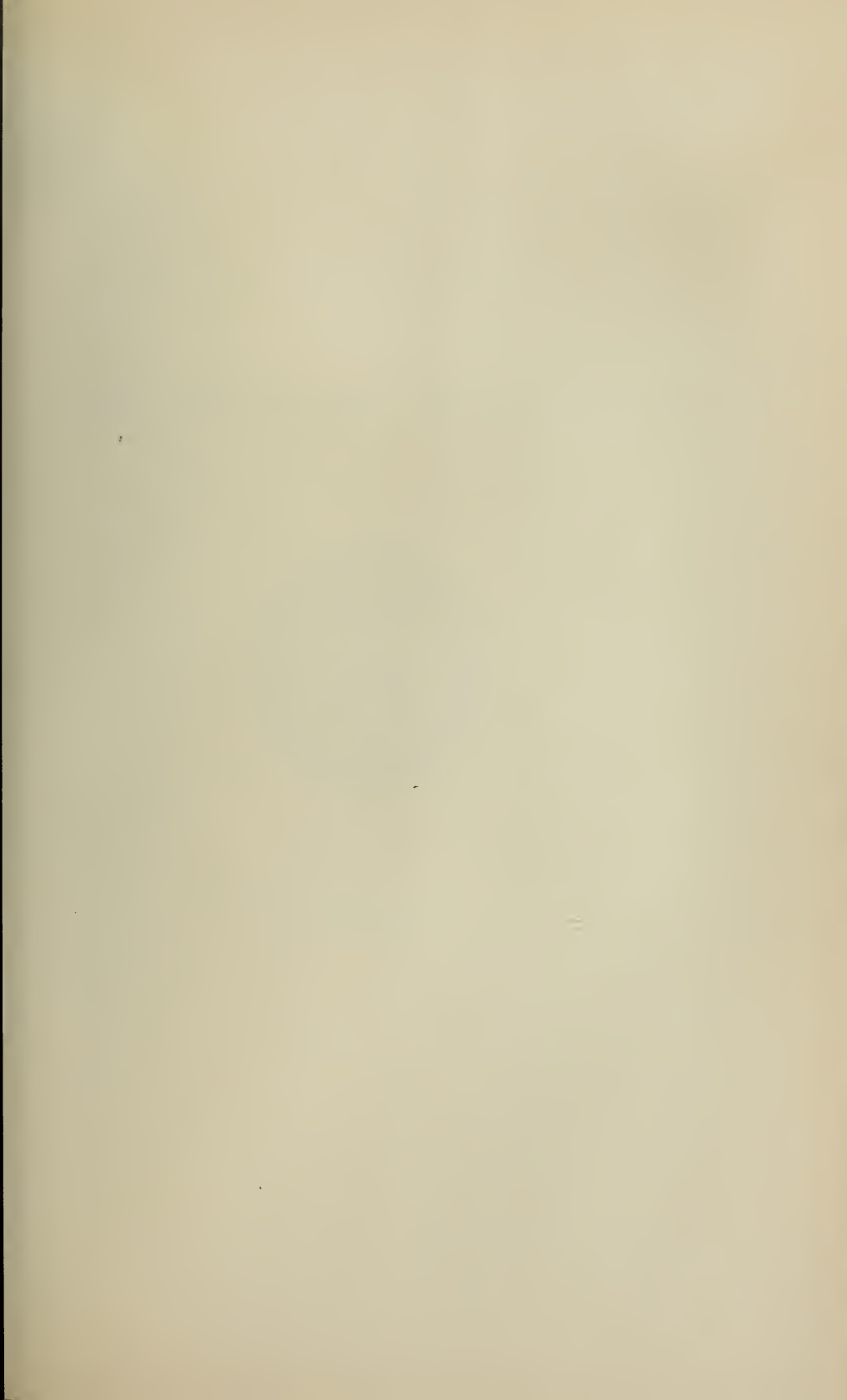
Bachelors of Arts of the Class of 1895	360
Bachelors of Arts out of course	28
Bachelors of Science	23
Bachelors of Science out of course	2
Bachelors of Divinity	6
Bachelors of Law	88
Bachelors of Law out of course	3
Doctors of Medicine	60
Doctors of Medicine out of course	1
Doctors of Medicine and Masters of Arts	5
Doctors of Dental Medicine	17
Doctors of Science	2
Doctors of Veterinary Medicine	10
Masters of Arts	81
Masters of Arts out of course	6
Doctors of Philosophy	16

INDEX.

	PAGE
Appendix	253-275
Appointments	19, 24, 29, 36, 76, 163, 253-262
ARNOLD ARBORETUM	35, 200
ARTS AND SCIENCES, Faculty of	19
" " " report of the Dean of	48-78
" " " instruction offered by	20, 49-76
" " " changes in courses	73-76
Athletics	12-19, 78, 272
BOTANIC GARDEN, report on	34, 194-199
" Museum	34, 196-199
BUSSEY INSTITUTION, report on	29, 164
CHEMICAL LABORATORY, report on	35, 202-206
" " improvements	35, 205-206
Choir	42
COLLEGE, report on	20, 81-84, 79-96
" Administrative Board	20, 22, 76, 91
" admission examinations to	84-90, 94
" age of students entering	11, 271
" rules relating to studies	95, 96
" statistics of	21, 79
" penalties	91, 93
" personal interest of teachers in students	21, 82, 93
" relations to professional schools	93-94
" schools and colleges whence students enter	10, 263-269
Deaths	3, 4, 5, 29, 107, 108, 163, 198, 236
Degrees conferred	21, 275
" recommendations for	96
" requirements for	20, 22, 76-78
DENTAL SCHOOL, report on	28, 162
" " instruction in	28, 162
DIVINITY SCHOOL, report on	24, 134-140
" " Alumni Association of	25
" " statistics of	24, 134-136
" " character of	24, 25, 136
" " courses of instruction	137-139
" " library	139
" " dormitories	44
Dining Hall Association	42-44
Elective Courses	5-9, 94

Finances	31, 46, 47, 166, 169, 183-185, 241, 243
FOGG ART MUSEUM, report of Curator of	40, 246-249
Foxcroft Club	43-45
Gifts and bequests	33, 47, 181, 197, 199, 236-239, 252
GRADUATE SCHOOL, report on	22, 101-123
" " statistics of	101-107
" " membership	102-107
" " fellowships and scholarships in	23, 24, 116-128
" " requirements for degrees	22, 108-114
" " occupations of Doctors of Philosophy or Science,	23, 114-116
" " convention of graduate students	128-132
HERBARIUM	33, 189-193
" pressing needs	191
JEFFERSON PHYSICAL LABORATORY, report on	36, 207-210
LAW SCHOOL, report on	26, 141-147
" " admission to	26
" " College graduates in	26, 27
" " statistics of	27, 142-147
" " growth and changes	26
" " quarter-centennial of Professor Langdell's deanship of,	26, 141
" " quinquennial catalogue of	141
LAWRENCE SCIENTIFIC SCHOOL, report on	97-100
" " " discipline of	98
" " " expenditures and equipment	22, 99
" " " statistics of	21, 97-99
" " " needs of	100
LIBRARY, report on	31, 172-188
" improvements	31, 32, 180
" catalogue department of	180-182
" ordering department of	183-187
" accessions to	172-174
" department libraries of	25, 100, 139, 140, 172, 220, 229, 242
" use of	33, 175-178
" losses	178
" map department	188
MEDICAL SCHOOL, report on	27, 148-161
" " special research in	149-152
" " instruction in	27, 28, 152-156
" " scholarships and fellowships	153
" " statistics of	157-160
" " needs of	28
" " admission of women	28, 161
Medical Visitor, report of	45, 274
MUSEUM OF COMPARATIVE ZOOLOGY, report on	38, 223-235
" " " " Zoölogical stations	38, 223-227
" " " " Virginia Barret Gibbs Scholar-	223
" " " " ship	227-233
" " " " collections	227-233
" " " " needs of	38, 223

OBSERVATORY, report on	36, 211-222
“ research and instruction	36-37, 211-212
“ work at Arequipa, Peru	37
“ employment of instruments in	37, 213-217
“ Henry Draper Memorial	217
“ Boyden Fund	37, 218-219
“ Bruce Photographic telescope	219-220
PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY,	
report on	39, 236-244
“ “ important additions to	39, 237-239
“ “ instruction and exploration	39, 40, 239-243
Publications	38, 172, 192, 204, 208, 209, 221, 234, 235
RADCLIFFE, report of Dean of	41, 250-252
Resignations	5, 19, 24, 36, 76, 141, 236, 237, 253
Secondary Schools	9, 10
SEMITIC MUSEUM, report on	40, 245
Special students	20, 21, 80-84, 95, 97
Summer courses	41, 72, 163, 196
Symphony concerts	42, 72
VETERINARY SCHOOL, report on	30, 165-167
“ “ need of endowment	167
“ HOSPITAL, report on	30, 168-171



TREASURER'S STATEMENT.



1895.

TREASURER'S STATEMENT.

TO THE BOARD OF OVERSEERS OF HARVARD COLLEGE : —

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending July 31, 1895, in the usual form.

The Funds separately invested, with the income thereof, are as follows : —

	UNIVERSITY.	Principal. July 31, 1895.	Income.
George B. Dorr Fund, University Houses and Lands,		\$115,966.56	\$5,241.71
Francis E. Parker Fund, University Houses and Lands,		113,817.44	5,144.53
John C. Gray Fund, University Houses and Lands,		25,000.00	1,130.00
Joseph Lee Fund, University Houses and Lands,		10,000.00	452.00
Insurance and Guaranty Fund (part of), University Houses and Lands,		140,991.48	6,402.08
Stock Account (part of), University Houses and Lands,			564.64
John Cowdin Fund, Real Estate in Boston,		22,000.00	1,942.15
Walter Hastings Fund, Real Estate in Cambridge,		20,000.00	1,757.05
COLLEGE.			
Stoughton Scholarship (part of), Real Estate in Dorchester,		1,294.30	
Pennoyer Scholarships (part of), Pennoyer Annuity in England,		4,444.44	145.19
Jonathan Phillips' Gift, Mortgages (paid during year),			182.65
City of Boston 3½'s,		10,109.57	175.00
Samuel Ward's Gift, Ward's (Bumkin) Island, Boston Harbor, . . .		1,200.00	
Scholarships of the Class of 1856, \$10,000 Frem., Elkhorn & Mo. Valley R.R. 6's, . .		10,000.00	600.00
LIBRARY.			
Charles Minot Fund (part of), \$60,000 Buffalo, Bradford, & Pittsb. R. R. 7's, . .		60,000.00	4,200.00
Ichabod Tucker Fund (part of), Policy of Mass. Hospital Life Insurance Co., . . .		5,000.00	200.00
Edwin Conant Fund (part of), Mortgage,		20,000.00	1,000.00
Amounts carried forward		<u>\$559,823.79</u>	<u>\$29,137.00</u>

Amounts brought forward \$559,823.79 \$29,137.00

MEDICAL SCHOOL.

Henry Willard Williams Fund,

100 shares State Street Exchange,	11,000.00	450.00
37 " American Bell Telephone Co., . . .	7,400.00	610.50
22 " Calumet & Hecla Mining Co.,	6,600.00	330.00

MUSEUM OF COMPARATIVE ZOOLOGY.

Agassiz Memorial Fund (part of),

Advances for new building, &c.,	14,624.67	941.71
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SPECIAL FUNDS.

Bussey Trust,

Real Estate,	392,709.18	37,068.56
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Robert Troup Paine Fund (accumulating),

\$37,000 Massachusetts 3½'s,	39,157.81	1,295.00
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Fund of the Class of 1834,

Policy of Mass. Hospital Life Insurance Co., . .	1,000.00	40.00
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Fund of the Class of 1853,

Policy of Mass. Hospital Life Insurance Co., . .	3,725.00	145.00
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George William Sawin Fund,

14 shares Boston & Providence R. R.,	3,563.50	140.00
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Deposit in Suffolk Savings Bank,	121.50	4.27
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Charles L. Hancock Bequest (part of),

Mortgage,	22,697.00	1,860.21
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Real Estate in Chelsea,	1,000.00	
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Price Greenleaf Fund. The total amount of this Fund is \$727,206.21, which is invested as follows:—

\$43,500 Consolidated R. R. of Vermont 5's, . .	38,280.00	2,175.00
12,200 Rutland R. R. 6's,	12,932.00	732.00
37,200 Rutland R. R. 5's	34,968.00	1,860.00
1,000 Cheshire R. R. 6's,	1,110.00	60.00
46,500 Ogdens. & L. Champ. R. R. 6's	46,500.00	2,790.00
23,800 Ogdens. & L. Champ. R. R. income 6's .	10,234.00	
3,000 Chicago, Burl. & Quincy R. R. 4's . . .	2,880.00	120.00
4,000 Chicago, Burl. & Northern R. R. 5's . .	4,000.00	200.00
23,000 Union Pacific Railway 6's	25,990.00	690.00
290 shares Northern R. R. (N. H.),	29,290.00	1,740.00
800 " Rutland " preferred,	28,000.00	3,200.00
40 " Ogdens. & L. Champ. R. R.,	680.00	
317 " Boston & Maine R. R.,	48,746.21	1,902.00
360 " Boston & Lowell "	46,800.00	2,520.00
237 " Fitchburg R. R., preferred	22,358.83	948.00
355 " Old Colony "	63,190.00	2,485.00
142 " Chicago, Burl. & Quincy R. R.,	18,946.35	603.50

Amounts carried forward	\$1,498,327.84	\$94,047.75
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Amounts brought forward \$1,498,327.84 \$94,047.75

Price Greenleaf Fund (*continued*).

20 shares N. Y. Central & Hudson River R. R.,	2,260.00	90.00
292 " Michigan Central R. R.,	28,032.00	1,168.00
122 " Union Pacific Railway,	7,161.40	
52 " West End Street Railway, preferred,	4,330.00	208.00
\$50,000 Metropolitan Tel. & Tel. Co. 1st M. 5's, .	49,750.00	2,500.00
25,000 New England " " " 6's, . . .	25,593.75	1,500.00
50,000 Chic. Junc. R'ys & Union Stock Yards 5's,	47,000.00	2,500.00
50,000 General Electric Co. 5's,	50,062.50	2,500.00
Merrimack Manufacturing Co.'s Note,	20,000.00	782.08
Cocheco " " "	55,000.00	1,031.25
" " " "(paid during year),		500.00
Lawrence " " "(paid during year),		787.50
Cash in New England Trust Co.,	3,111.17	175.47
Totals,	\$1,790,628.66	\$107,790.05

The other Funds are invested as a whole. The general investments are stated in detail on pages 22 and 23 of this report. The usual summary of them, and of their income, is as follows:—

Investments.	Principal, Aug. 1, 1894.	Principal, July 31, 1895.	Income.
Notes, Mortgages, &c.,	\$208,000.00	\$335,500.00	\$13,769.40
Railroad Bonds and Premiums, . . .	2,161,941.37	2,125,898.37	98,593.76
Railroad Stocks,	249,687.50	249,687.50	11,125.00
Sundry Bonds,	686,642.50	917,142.50	38,500.00
Manufacturing Stock,	37,322.29	37,322.29	3,380.00
Real Estate,	2,433,502.98	2,434,464.32	108,468.81
Brattle Street Reversion (1918), . . .	1,000.00	1,000.00	
Advances to Bussey Trust,	35,291.89	54,835.51	1,764.59
" " Woodland Hill Fund, . . .		2,186.93	
" " Lawrence Scientific Sch., . . .		9,974.43	
" " Sch. of Veterinary Med., . . .	21,782.79	24,406.01	1,306.97
" " Observatory,	5,097.52	2,825.90	254.88
" " Botanic Department, . . .	11,278.03	14,699.09	563.90
" " University Lands, . . .	30,000.00	30,000.00	1,500.00
" " Dining Hall Association, . . .	18,232.16	16,732.16	1,093.93
" " Foxcroft Club,		1,000.00	50.00
Baring Brothers & Company,	1,522.18	1,714.66	47.29
Term Bills due in October,	154,899.91	173,923.65	
Term Bills overdue,	3,967.91	4,543.03	
Cash in Suffolk National Bank, . . .	65,558.44	28,790.67	
Cash in National Union Bank,	376,870.31	115,083.73	4,543.01
Cash in hands of Bursar,	19,154.13	9,222.42	
Totals of general investments, . . .	\$6,521,751.91	\$6,590,953.17	\$284,961.54
Totals of special investments, . . .	1,845,516.81	1,790,628.66	107,790.05
Amounts	\$8,367,268.72	\$8,381,581.83	\$392,751.59

The account of Advances for Railroad Bond Premiums has been credited with the sum of \$19,843.00 as the fair yearly repayment from income on account of premiums advanced; and the sum of \$7942.50 has been credited to University Houses and Lands as a repayment to capital from a wasting security.

The net income of the general investments (\$284,961.54) has been divided at the rate of $4\frac{52}{100}$ per cent. among the Funds to which they belong, after allowing to certain temporary Funds and balances a special rate of three per cent. The fraction, which was \$285.69, has been placed as usual to the credit of the University account.

The rate of income compared with that for 1893-94, shows a loss of thirty-two one hundredths of one per cent., which is due partly to vacant real estate, and partly to lower rates of interest from corporation notes.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments:—

Interest on Funds for

University Salaries and Expenses,	\$41,369.81	
Library Salaries and Expenses (not books),	24,545.43	
College Salaries and Expenses,	39,001.91	
Gymnasium, and repairs on College buildings, . .	none.	
College Term Bills,	346,262.98	
Sundry receipts, as follows:—		
Gifts for Salaries and Expenses,	\$1,500.00	
Use of buildings (not University houses		
and lands),	1,968.00	
Laboratory and other fees,	32,088.33	
Sales of catalogues, pamphlets, etc.,	3,454.09	
Insurance,	107.21	
	<hr/>	39,117.63
		<hr/>
		\$490,297.76

Expended for

University Salaries and Expenses,	\$59,443.83	
Library Salaries and Expenses (not books),	33,522.94	
College Expenses,	88,165.34	
College Salaries, for instruction,	241,649.65	
Gymnasium Expenses,	9,387.21	
Repairs, insurance and cleaning on College buildings		
not valued on Treasurer's books,	25,988.23	
Conant Hall (construction), from income thereof, . .	5,035.58	
Perkins Hall (construction), from income thereof, . .	4,805.43	
	<hr/>	\$468,058.21
Balance, appropriated for Gore Hall alterations,		
already begun,		\$22,239.55

For the University, College and Library accounts, taken together, a small increase of income from more tuition-fees and from new Funds, the new income from Perkins and Conant Halls, and a temporary reduction in usual expenditures, have enabled the Corporation to appropriate from the year's income \$22,239.55 towards the heavy cost of the alterations, begun during the year and now nearly completed, in Gore Hall. After adding the income of the Stock Account to its capital to make good in part former deficits, there has been no deficit for 1894-95. For 1893-94 there was a deficit of \$518.54, and for the previous year a deficit of \$25,181.26.

For the Divinity School, a large temporary increase of income from the Bussey Trust, and much smaller expenditure for improvements, have left a surplus of \$6396.05. For 1893-94 the surplus was \$751.18.

The Law School with many more tuition-fees, a large temporary increase of income from the Bussey Trust, and somewhat less expenditure, has had a surplus of \$24,568.11. For 1893-94 the surplus was \$11,134.77.

The Medical School has had more tuition-fees and a larger expenditure, with a deficit of \$5123.85. For 1893-94 the deficit was \$5367.73. These deficits are charged against previous accumulations.

The Dental School with many more tuition-fees and much larger outlays, chiefly for instruction and improvements, has had a surplus of \$103.17. For 1893-94 the surplus was \$3465.56.

The Lawrence Scientific School has had gifts for immediate use and more tuition-fees; but very much larger outlays, chiefly for instruction, apparatus, and improvements, have caused a deficit of \$15,356.85. For 1893-94 the deficit was \$2776.78. The indebtedness of the School now amounts to \$9974.43.

The Museum of Comparative Zoölogy has spent all the income of its restricted Funds as required by the conditions of gift, and has used the surplus income of the Agassiz Memorial Fund, as heretofore, to pay interest upon, and to repay in part, the principal of the advances from the Memorial Fund, which were used to extend the Museum building and to buy fossils.

For the general account of the Observatory there has been a surplus of \$2271.62. For 1893-94 the surplus was \$193.31.

Nearly all the income of the Boyden Fund has been used during the year for the expedition to Peru, and the large gifts from Mrs. Draper, for the special research work of the Draper Memorial, have been mostly spent as heretofore.

The ordinary income and expenditure of the Bussey Institution have varied little from the previous year, but a readjustment of old income and expense accounts between the Bussey Real Estate and the Bussey Institution has changed the surplus of that year into a deficit of \$1691.65. For 1893-94 there was a surplus of \$2837.96.

The Veterinary School has again had more tuition-fees and smaller receipts from its Hospital and Forge. No gifts for current use have been received during the year. The deficit has been \$2623.22. For 1893-94 the deficit was \$2762.92. These continued deficits are steadily increasing the debt to the University, which is now so large as to demand serious consideration, and speedy action.

During the year, a new account has been opened for receipts and payments of principal for the Bussey "Woodland Hill" Estate. To this account have been transferred all the amounts heretofore received from the City of Boston and the Boston and Providence Railroad Company for land taken for public uses, and also all sums paid out for improvement of the "Muddy River" lot. The small balance to the debit of the account will soon be more than offset by the sums now due for land recently taken for altering the grade of the Boston and Providence Railroad tracks.

To the Bussey Trust has been charged the sum of \$18,000 for the payments of capital made during the year to the six surviving children of Mrs. Motley, in accordance with the will of Benjamin Bussey.

Gifts have been received during the year as follows: —

GIFTS TO FORM NEW FUNDS OR INCREASE OLD ONES.

From Edward Russell, \$500, to increase the Scholarship founded by him.

From the estate of Mrs. Anne M. Sweetser, \$45,000, part of her unrestricted residuary bequest.

From the estate of Charles L. Hancock, \$1150 additional, on account of his residuary bequest.

From Milton Reed, \$100, to be added to the Fall River Scholarship Fund established by him.

From the estate of Robert C. Winthrop, \$5000, for the establishment of a scholarship or scholarships.

From the estate of Miss Caroline Haskell Ingersoll, \$2500, the balance of her bequest of \$5000, for the establishment of "The Ingersoll lecture on the Immortality of Man."

From the estate of George Baxter Hyde, his unrestricted bequest of \$5000.

From the estate of Miss Anna Cabot Lowell, who died in 1810, her bequest of \$500, for the Botanic department.

From the estate of Miss Anna Cabot Lowell, who died in 1894, her bequest of \$5000, to be added to the "Lowell Fund of the Botanic Garden."

From the estate of Mrs. Sophia Gage Burr, \$1900, for her bequest of \$2000, after payment of the Pennsylvania inheritance tax, to be added to the Rushton Dashwood Burr Fund for the benefit of the library of the Divinity School; and \$15,123.12, on account of her residuary bequest for maintaining the Burr Scholarships in Harvard College.

From the estate of George E. Ellis, \$30,000, part of his residuary bequest to constitute a fund to be known as the "Harvard Ellis Fund," in memory of his son John Harvard Ellis of the class of 1862.

From the estate of Ebenezer Rockwood Hoar, \$10,000, the income to be applied to the education of meritorious undergraduates, those from the town of Concord to have the preference.

From Mrs. George Linder, \$5000, to establish the Alfred Hosmer Linder Scholarship in the Medical School.

From F. C. Woodman, \$20, to be added to the Frank Bolles Memorial Fund.

From the Treasurer of the Class Subscription Fund, the additional sum of \$5117.54.

The total amount of these gifts for capital account is \$131,910.66, as is also stated on page 20 of this report.

GIFTS FOR IMMEDIATE USE.

From Mrs. Henry Draper, of New York, an additional sum of \$9999.96, to be expended by the Director of the

Observatory in prosecuting the researches in the photography of stella spectra, with which the late Dr. Henry Draper's name is honorably associated.

From William G. Farlow, his annual gift of \$450, towards the salary of the Assistant in the Cryptogamic Herbarium.

From George W. Wales, \$200, for books for the Library, in continuance of former gifts for the same purpose.

From the Society for Promoting Theological Education, \$1300, for the library of the Divinity School.

From Moorfield Storey and James J. Putnam, \$1950, from the income of a trust fund held by them, for the payment of certain salaries in the Medical School.

From Mrs. C. M. Barnard, \$600, her twelfth yearly payment for the Warren H. Cudworth Scholarships.

From an anonymous friend, through Professor Goodale, \$3000, for the installation of specimens in the Botanic Museum, according to Professor Goodale's plans.

For the library of the French department, from

Cercle Français	\$200	H. A. Hutchins	\$25
J. T. Coolidge, Jr.	10	D. H. Morris	50
C. P. Curtis	10	Howard C. Smith	100
H. G. Curtis	25	Roger Upton	50
R. C. Hooper	5		<u>\$475</u>

Through Francis G. Peabody, \$10.25, for the Social Questions library.

From Isidor Straus, \$875, for providing the Semitic Museum with additional cases for exhibition purposes.

From the estate of Edwin Conant, \$1220.14 additional, on account of his unrestricted residuary bequest.

From James A. Garland, \$3000, for salaries in the department of Architecture.

Through Louis D. Brandeis, the fifth annual gift of \$1000, from an anonymous friend of the Law School, to defray the expenses of the course on the Peculiarities of Massachusetts Law and Practice for the year 1894-95.

From John Lowell, on behalf of himself and Mrs. Lowell, \$400, the tenth yearly payment for the support of two Scholarships to be known as the George Emerson Lowell Scholarships.

From the estate of Arthur Rotch, \$2500, the balance of the amount guaranteed by him towards the current expenses of the Lawrence Scientific School for 1893-94.

From Henry C. Warren, \$500, for the salary of the Assistant in Indo-Iranian languages for 1894-95.

From Charles Harrington, \$30, for the department of Hygiene and Materia Medica.

Through Edward Channing, \$100, for the purchase of books for the Historical library.

From Miss Lucy Ellis, her third yearly payment of \$2000, for assistance in the departments of Physiology and Pathological Bacteriology at the Medical School.

From Seth Low, \$1000, towards the erection and endowment of "Phillips Brooks House."

Additional subscriptions from graduates of the Dental School, to be applied towards the immediate wants of the School, paid to August 1, 1895, from

Charles H. Abbott	\$25	William H. Potter	\$5
C. A. Brackett	25	James Shepherd	5
P. B. Laskey	5	Charles Wilson	10
			<u>\$75</u>

Additional subscriptions for a new building for the Dental School, paid to August 1, 1895, from

Oliver Ames	\$1000	J. M. Sears	\$1000
Martin Brimmer	1000		<u>\$3000</u>

From Arthur T. Lyman, \$550, towards the expense of printing the new hymn book for Appleton Chapel.

From George A. Nickerson, \$1000, for the Botanic department.

From Henry C. Warren, \$750 additional, to be applied to the printing of Hindoo texts and of translations from the same, and to the purchase of Hindoo manuscripts.

Additional subscriptions for providing stack room for books, paid to August 1, 1895, from

J. H. Allen	\$25.00	Walter Woodman	\$50.00
C. W. Amory	100.00	Interest on deposits, through	
S. D. Warren	1000.00	Moses Williams, Treas., . .	5.77
			<u>\$1180.77</u>

From the old "University Club," \$21.06, being its cash balance at the time of its death, which was then sent by Dr. James C. White, to the Treasurer of the College, and is now applied by him towards the improvement of Gore Hall.

Through M. M. Skinner, \$24.50, for the Semitic library.

From Charles Sprague Sargent, \$1938 additional, which has been expended for books for the Arnold Arboretum.

Through Gardiner M. Lane, twenty-eight cents, interest received by him on subscriptions for illustrated lectures in the Latin and Greek departments.

The total amount of these gifts for immediate use is \$39,149.96, as is also stated on page 18 of this report.

EDWARD W. HOOPER, *Treasurer.*

BOSTON, November 23, 1895.

ACCOUNTS.

*General Statement of Receipts and Disbursements
for the year ending*

INCOME.

Interest on notes, mortgages, and advances,		\$27,449.90
United States 5's,	2,500.00	
Massachusetts 3½'s,	1,295.00	
City of Boston 3½'s,	175.00	
Chicago Sanitary District 5's,	5,000.00	
Metropolitan Telephone & Telegraph Co. 5's,	7,500.00	
Chicago Junc. Railways & Union Stock Yards Co. 5's,	10,000.00	
New England Telephone and Telegraph Co. 6's,	7,500.00	
General Electric Co. 5's,	15,000.00	
Policies Mass. Hospital Life Insurance Co.,	385.00	
Deposit with Suffolk Savings Bank,	4.27	
Deposit with New England Trust Co.,	175.47	
Deposit with National Union Bank,	4,543.01	
Interest on Railroad Bonds (after deducting \$19,843.00 for sinking premiums).		
Buffalo, Bradford & Pittsburg 7's,	\$4,200.00	
Fremont, Elkhorn & Mo. Valley 6's,	600.00	
Consolidated R. R. of Vermont 5's,	2,175.00	
Rutland Railroad 6's,	732.00	
Rutland Railroad 5's,	1,860.00	
Cheshire Railroad 6's,	60.00	
Union Pacific 6's,	690.00	
Ogdensburg & Lake Champlain 6's,	2,790.00	
Chicago, Burlington & Northern 5's,	200.00	
Chicago, Burlington & Quincy 4's,	120.00	
Eastern Railroad sterling 6's,	5,744.76	
Eastern Railroad 6's,	18,490.00	
Union Pacific R'y Omaha Bridge Renewal 5's,	8,555.00	
Burlington & Mo. River in Neb. 6's,	16,332.00	
Chicago, Burlington & Quincy 7's,	24,130.00	
Chicago, Burlington & Quincy conv. 5's,	4,200.00	
Fort Scott, So. E. & Memphis 7's,	6,966.00	
Chicago & No. W., Madison Extension 7's,	5,310.00	
Minneapolis Union 5's,	4,866.00	
Great Northern Coll. Trust 4's,	4,000.00	112,020.76
Dividends on Stocks.		
Amoskeag Manufacturing Co.,	\$360.00	
Merrimack " "	1,020.00	
Pacific Mills,	2,000.00	3,380.00
Chicago, Burlington & Quincy R. R.,	\$2,728.50	
Rutland R. R., preferred,	3,200.00	
Boston & Maine R. R.,	1,902.00	
Old Colony R. R.,	2,485.00	
New York Central & Hudson River R. R.,	9,090.00	
Michigan Central R. R.,	1,168.00	

Amounts carried forward, \$20,573.50 \$196,928.41

*of the Treasurer of Harvard College,
July 31, 1895.*

EXPENSES.

Paid to account of Expenses in the

University, as per Table I (page 42).

Fellowships and Scholarships,	\$12,875.00	
Prizes,	400.00	
Salaries and other expenses,	56,643.83	
Sundry payments made from special Funds, .	183,677.41	\$253,596.24

College, as per Table II (page 45).

Salaries for instruction,	\$241,649.65	
Repairs, insurance, and cleaning on College		
Edifices, not valued on Treasurer's books, .	25,988.23	
Conant Hall (construction),	5,095.58	
Perkins Hall " ,	4,805.43	
General expenses,	45,016.13	
Scholarships,	33,609.19	
Beneficiaries,	16,738.76	
Prizes,	1,059.16	
Botanic Garden and Botanic Museum,	13,011.39	
Herbarium,	9,249.68	
Hemenway Gymnasium,	9,387.21	
Jefferson Physical Laboratory,	3,060.51	
Books for special departments,	1,268.02	
Apparatus, &c., from special gifts,	1,450.61	
Printing, from Publication Funds,	2,607.49	
Summer Schools,	12,118.87	
Appleton Chapel,	8,590.79	
Appropriations for collect'ns and laborator's, .	22,439.55	457,146.25

Library, as per Table III (page 54).

Salaries,	\$12,500.00	
Books,	14,616.18	
Other expenses,	21,022.94	48,139.12

Divinity School, as per Table IV (page 57).

Salaries for instruction,	\$21,399.79	
Scholarships and Beneficiaries,	2,104.14	
Other expenses,	7,314.41	30,818.34

Law School, as per Table V (page 59).

Salaries for instruction,	\$35,100.00	
Scholarships,	2,700.00	
Other expenses,	18,687.47	56,487.47

Amount carried forward \$846,187.42

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (*continued*).

Amounts brought forward,		\$20,573.50	\$196,928.41
Dividends on Stocks (<i>continued</i>).			
Boston & Lowell R. R.,	2,520.00		
Northern R. R. (N. H.),	1,740.00		
West End Street Railway, preferred,	208.00		
Fitchburg R. R., preferred,	948.00		
Boston & Providence R. R.,	140.00	26,129.50	
State Street Exchange,	\$450.00		
American Bell Telephone Co.,	610.50		
Calumet & Hecla Mining Co.,	330.00	1,390.50	
Real Estate Investments, from rents, &c., net receipts.			
Cambridge (University Houses			
and Lands) gross receipts,	\$38,915.38		
Less Taxes,	\$2,049.50		
Insurance,	1,085.04		
Repairs, improvements,			
care, &c.,	8,903.38		
Repaid to capital,	7,942.50	19,980.42	\$18,934.96
Boston (general investments).			
Gross receipts,	\$165,535.12		
Less Taxes,	\$29,324.80		
Insurance,	5,698.13		
Repairs, improvements,			
care, &c.,	14,223.99		
Repaid to capital,	7,819.39	57,066.31	108,468.81
Bussey real estate.			
Gross receipts,	\$57,395.21		
Less Taxes,	\$7,969.28		
Insurance,	243.00		
Interest,	1,764.59		
Repairs, improvements,			
care, &c.,	4,046.52		
Heat and power,	6,303.26	20,326.65	37,068.56
Sundry estates (special investments).			
Gross receipts,	\$4,779.99		
Less Taxes,	\$706.82		
Repairs,	373.97	1,080.79	3,699.20
			168,171.53
Term Bills.			
College, as per Table II,	\$346,262.98		
Divinity School, as per Table IV,	6,640.87		
Law School, as per Table V,	59,360.00		
Medical School, as per Table VI,	94,168.24		
Dental School, as per Table VII,	12,800.00		
Lawrence Scientific School, as per Table VIII,	45,405.00		
Bussey Institution, as per Table XI,	360.00		
School of Veterinary Medicine, as per Table XII,	6,305.10	571,302.19	
Amount carried forward,		\$963,922.13	

of the Treasurer of Harvard College,
July 31, 1895.

EXPENSES (*continued*).

Amount brought forward,		\$846,187.42
Medical School , as per Table VI (page 60).		
Salaries for instruction,	\$72,975.00	
Fees repaid to Instructors,	4,385.83	
Scholarships and Beneficiaries,	3,140.00	
Boylston Medical Prizes ,	50.00	
Warren Anatomical Museum ,	441.24	
Sundry payments made from special Funds,	3,509.08	
Laboratory expenses, &c.,	14,945.39	
General expenses,	20,468.90	119,915.44
Dental School , as per Table VII (page 62).		
Salaries for instruction,	\$8,250.00	
Other expenses,	12,351.57	20,601.57
Lawrence Scientific School , as per Table VIII (page 63).		
Salaries for instruction,	\$38,449.76	
Scholarships and Beneficiaries,	4,100.00	
Other expenses,	32,737.89	75,287.65
Museum of Comparative Zoölogy , as per Table IX (page 64).		
Paid from sundry Funds on the order of the Faculty,	\$21,819.72	
Sturgis Hooper Fund , Professor of Geology,	4,590.00	26,409.72
Observatory , as per Table X (page 65).		
Salaries,	\$9,500.00	
Other expenses,	47,248.44	56,748.44
Bussey Institution , as per table XI (page 66).		
Salaries for instruction,	\$6,227.40	
Other expenses,	18,130.95	24,358.35
Arnold Arboretum , as per Table XI (page 66).		
Salaries,	\$3,500.00	
Other expenses,	10,209.26	13,709.26
School of Veterinary Medicine , as per Table XII (page 67).		
Salaries for instruction,	\$7,750.00	
Other expenses,	17,097.69	24,847.69
Annuities from the following Funds.		
Bussey Trust ,	\$5,047.90	
Gore ,	300.00	
Lucy Osgood ,	420.00	
Gurney ,	1,000.00	
George William Sawin ,	144.27	
Henry Willard Williams ,	1,390.50	8,302.67
Amount carried forward,		\$1,216,368.21

*General Statement of Receipts and Disbursements
for the year ending*

INCOME (*continued*).

Amount brought forward,		\$963,922.13
Sundries.		
William Pennoyer Annuity,	\$145.19	
Asa Gray's copyrights,	2,814.97	
Phormio copyright,	75.00	
Trustee of Thayer Scholarships,	3,000.00	
Matthews Scholarships ($\frac{1}{2}$ net rents of Hall), . .	5,121.48	
Trustees of Edward Hopkins ,	214.10	
Sale of grass, wood, old material, etc.,	3,389.52	
Sale of old examination papers,	215.94	
Sale of tickets to Commencement Dinner,	667.00	
Sale of books, pamphlets, catalogues, &c.,	3,068.93	
Board of horses, cattle, &c., at Bussey Institution, .	2,186.67	
Repayment of part of cost of publishing <i>Observa-</i> <i>tory Annals</i> ,	244.98	
Repayment of advances for microscopes,	604.25	
Unexpended appropriation returned,	2.00	
Laboratory instruction to Dental and Veterinary students,	1,020.00	
Use of Library by resident graduates and others, . .	130.00	
Use of lockers in Hemenway Gymnasium,	2,912.00	
Use of Observatory apparatus,	190.00	
Use of Buildings (not University Houses & Lands), .	3,468.00	
Fees for admission and condition examinations, . .	1,605.00	
Fees in Infirmary and Laboratory, Dental School, .	6,585.70	
Fees from Veterinary Hospital and Forge,	15,703.58	
Fees for laboratory courses in Lawrence Scientific School,	66.25	
Fees for Summer Courses,	\$11,793.35	
Other receipts from Summer Courses,	188.43	
	<hr/>	11,981.78
Laboratory fees {	Chemistry,	\$8,762.05
	Physics,	3,272.50
	Natural History,	3,215.00
	Philosophy,	90.00
	<hr/>	15,339.55
Fees for examination for degrees of Ph.D. and S.D., .	120.00	
Fines,	10.25	
Insurance,	136.71	81,018.85
	<hr/>	
Sundry Gifts for immediate use, see page 12,		39,149.96
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Total amount of income,		\$1,084,090.94

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS FOR CAPITAL ACCOUNT.

Edward Russell Scholarship (additional),	\$500.00	
Lowell Fund for a Botanic Garden (additional), .	5,500.00	
	<hr/>	
Amounts carried forward,	\$6,000.00	\$1,084,090.94

of the Treasurer of Harvard College,
July 31, 1895.

EXPENSES (*continued*).

Amount brought forward,	\$1,216,368.21	
Class Funds.		
Paid the Secretary of the Class of 1834 ,	\$40.00	
" " " " 1853 ,	145.00	185.00

Sundry payments from income.

From Gray Fund for Engravings, to the Treasurer of the Museum of Fine Arts,	\$374.25	
From Daniel Williams Fund, for the benefit of the Herring Pond and Masphee Indians,	794.87	
From Sarah Winslow Fund, to the Minister and Teacher at Tyngsborough, Mass.,	226.74	
From Huntington Frothingham Wolcott Fund, to the Treasurer of the Peabody Museum of American Archaeology and Ethnology,	508.15	
From John Witt Randall Fund, expenses on account of the Randall collection,	683.70	2,587.71

INVESTMENTS AND SUNDRY PAYMENTS.

\$200,000 United States 5's of 1904,	\$230,500.00	
10,000 City of Boston 3½'s, of 1920 (Jonathan Phillips' Gift),	10,375.00	
Accrued interest and expenses on same,	92.22	
Improvements, &c., on Hayward Estate,	8,780.73	
Purchase of land on the east side of Boylston Street, Cambridge (University Houses and Lands),	720.75	
Advanced to Foxcroft Club, to be repaid with interest,	1,000.00	251,468.70
Invested in notes of manufacturing companies, &c.,	\$405,000.00	
Less mortgages and notes paid off,	298,000.00	107,000.00
Paid Baring Brothers & Co. in account,	\$194.82	
Less commission and expenses,	2.34	192.48
Temporary deposits repaid in part,		440.00

Bussey Trust.

Legacies under Benjamin Bussey's will paid to Mrs. Motley's children,	\$18,000.00	
Transferred to Woodland Hill Fund,	2,383.62	20,383.62

Woodland Hill Fund.

Transferred to Bussey Real Estate,	\$7,322.92	
Less transferred from Bussey Real Estate,	\$2,752.37	
Less transferred from Bussey Trust,	2,383.62	5,135.99
		2,186.93

Amount carried forward, \$1,600,812.65

*General Statement of Receipts and Disbursements
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amounts brought forward, . . .	\$6,000.00	\$1,084,090.94
Rushton Dashwood Burr Fund,	1,900.00	
Isaac Sweetser Fund,	45,000.00	
Charles L. Hancock Bequest (additional), . . .	1,150.00	
Fall River Scholarship (additional),	100.00	
Robert C. Winthrop Scholarship,	5,000.00	
Ingersoll Lecture Fund (additional),	2,500.00	
George Baxter Hyde Bequest,	5,000.00	
Burr Scholarships,	15,123.12	
Harvard Ellis Fund,	30,000.00	
Ebenezer Rockwood Hoar Scholarship, . . .	10,000.00	
Alfred Hosmer Linder Scholarship,	5,000.00	
Frank Bolles Memorial Fund (additional), . . .	20.00	
Class Subscription Fund (additional),	5,117.54	131,910.66

SALES.

\$16,200 Burl. & Mo. R. (Neb.) R. R. 6's (paid off), .	\$16,200.00	
Land in Cambridge (University Houses and Lands) taken by the City for Park Purposes,	12,681.76	
Cheshire R. R. Co. dividend of capital,	36.50	
Indian Orchard Mills " " "	100.80	29,019.06

SUNDRIES.

From Dining Hall Association, to reduce debt, . . .	\$1,500.00	
Advances to premiums on R. R. Bonds, repaid, . .	19,843.00	
Advances to improvements on Gray and Andrews Estates, repaid,	7,819.39	
Advances to Mus. of Comp. Zoölogy, repaid in part, .	4,209.59	
University Houses and Lands, repaid to capital, . .	7,942.50	
From Woodland Hill Fund, repaid to Bussey Real Estate,	840.00	
Repayment on account of R. T. Paine Fellowship,	250.00	42,404.48

Bursar's Sundry Accounts.

Old balances which now appear in the Treas- urer's accounts for the first time,	\$22,083.62	
Receipts during the year,	314,718.27	336,801.89

Balance, August 1, 1894.

Cash in Suffolk National Bank,	\$65,558.44	
Cash in New England Trust Co.,	3,074.67	
Cash in National Union Bank,	376,870.31	
Cash in hands of Charles F. Mason, Bursar, . .	19,154.13	
Term Bills due October, 1894,	154,899.91	
" " overdue,	3,967.91	623,525.37

Total, \$2,247,752.40

*of the Treasurer of Harvard College,
July 31, 1895.*

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward,	\$1,600,812.65	
Overpayments of interest repaid.		
By Dental School Building Fund,	\$348.39	
By Huntington Frothingham Wolcott		
Fund,	<u>24.15</u>	372.54

Bursar's Sundry Accounts.

Old balance which now appears in the Treasurer's accounts for the first time,	\$6.42	
Payments during the year.		
On account of Harvard Dining Association, \$185,903.01		
On account of Foxcroft Club,	33,866.02	
On sundry accounts,	<u>92,117.09</u>	311,892.54

Balance, July 31, 1895.

Cash in Suffolk National Bank,	\$28,790.67	
Cash in New England Trust Co.,	3,111.17	
Cash in National Union Bank,	115,083.73	
Cash in hands of Charles F. Mason, Bursar,	9,222.42	
Term Bills due October, 1895,	173,923.65	
" " overdue,	<u>4,543.03</u>	334,674.67
Total,		<u>\$2,247,752.40</u>

The following Account exhibits the State of the Property, as entered upon the Treasurer's Books, July 31, 1895.

Separate Investments, as stated in detail on pages 3, 4, and 5 of this report, consisting of

Mortgages and Notes,	\$117,697.00	
Railroad Bonds,	246,894.00	
Sundry Bonds,	221,673.63	
Railroad Stocks,	303,358.29	
Sundry Stocks,	25,000.00	
University Houses and Lands,	405,775.48	
Other Real Estate,	438,203.48	
Sundries,	32,026.78	
	<hr/>	
Amounting to		\$1,790,628.66

And "General Investments," as follows:—

Mortgages and Notes.

Mortgages,	\$5,500.00	
Boott Cotton Mills' Note,	100,000.00	
Cocheco Manufacturing Co.'s Note,	50,000.00	
Merrimack Manufacturing Co.'s Note,	80,000.00	
New York, New Haven & Hartford R. R. Co.'s Note,	100,000.00	
	<hr/>	
		335,500.00

Railroad Bonds.

\$272,800 Burl. & Mo. R. in Nebr. non ex. 6's, . .	\$272,800.00	
104,000 Ft. Scott, So. E. & Mem., 1st M. 7's, .	104,000.00	
393,000 Eastern, 1st Mortg. 6's,	393,000.00	
£19,600 Eastern " " Sterling, . . .	95,383.40	
500,000 Chicago, Burl. & Quincy Consol. 7's, . .	500,000.00	
100,000 Chicago, Burl. & Quincy Conv. 5's, . .	100,000.00	
175,000 U. P. Omaha Bridge Renewal 5's, . .	175,000.00	
100,000 Chic. & No. W. Madison Ex. 1st M. 7's,	100,000.00	
100,000 Minneapolis Union 1st M. 5's,	100,000.00	
100,000 Great Northern Coll. Trust 4's,	90,501.00	
Railroad Bond Premiums,	195,213.97	
	<hr/>	
		2,125,898.37

Sundry Bonds.

\$200,000 United States 5's,	\$230,500.00	
100,000 Metropolitan Tel. & Tel. Co. 1st M. 5's,	99,500.00	
100,000 New England " " 6's,	102,375.00	
150,000 Chicago Junction Railways and Union Stock Yards Coll. Trust 5's,	143,905.00	
250,000 General Electric Co. 5's,	237,487.50	
100,000 Chicago Sanitary District 5's,	103,375.00	
	<hr/>	
		917,142.50

Amount carried forward, \$5,169,169.53

Amount brought forward, \$5,169,169.53

Sundry Stocks.

12 shares Amoskeag Manufacturing Co., . . .	\$3,654.00	
17 " Merrimack "	17,000.00	
20 " Pacific Mills,	16,668.29	
500 " Chicago, Burl. & Quincy R. R., . .	45,000.00	
2000 " N. Y. Central & Hud. River R. R., .	204,687.50	287,009.79

Real Estate.

Amory Estate, Franklin Street, Boston, . . .	\$165,615.81	
Webb Estate, Washington Street, Boston, . .	164,604.79	
Gray and Andrews Estates, Washington Street, Boston,	780,757.52	
Cole Estate, Washington Street, Boston, . . .	250,000.00	
Lowell Estate, Washington Street, Boston, . .	464,368.91	
Hayward Estate, Washington Street, Boston, .	579,641.20	
Townsend Estate, Hawkins Street, Boston, . .	29,476.09	
Reversion of Buildings in Brattle Street, Boston,	1,000.00	2,435,464.32

Sundries.

Advances to Bussey Trust,	\$54,835.51	
" " Woodland Hill Fund,	2,186.93	
" " Lawrence Scientific School, . .	9,974.43	
" " School of Veterinary Medicine, . .	24,406.01	
" " Observatory,	2,825.90	
" " Botanic Department,	14,699.09	
" " University Lands,	30,000.00	
" " Dining Hall Association,	16,732.16	
" " Foxcroft Club,	1,000.00	
Baring Brothers & Co.,	1,714.66	
Term bills due October, 1895,	173,923.65	
" " overdue,	4,543.03	336,841.37
Cash in Suffolk National Bank,	\$28,790.67	
" " National Union Bank,	115,083.73	
" " hands of Charles F. Mason, Bursar, . . .	9,222.42	153,096.82
Total,		\$8,381,581.83

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

Principal, Aug. 1, 1894.	UNIVERSITY FUNDS.	Principal, July 31, 1895.
\$97,553.31	Stock Account (so called),	\$101,962.71
141,638.74	Ins. and Guaranty Fund (so called), .	141,638.74
15,750.00	Israel Munson Fund,	15,750.00
16,871.63	Leonard Jarvis Fund,	16,871.63
25,000.00	John C. Gray Fund,	25,000.00
115,966.56	George B. Dorr Fund,	115,966.56
113,817.44	Francis E. Parker Fund,	113,817.44
5,000.00	Stanton Blake Fund,	5,000.00
4,771.33	Charlotte F. Blanchard Fund, .	4,771.33
10,000.00	Joseph Lee Fund,	10,000.00
100,000.00	William F. Weld Fund,	100,000.00
10,000.00	Henry P. Kidder Fund,	10,000.00
48,458.50	George Draper Fund,	48,458.50
	Isaac Sweetser Fund,	45,000.00
	George Baxter Hyde Fund, . .	5,000.00
	Harvard Ellis Fund,	30,000.00
5,250.00	Samuel D. Bradford Fund, . . .	5,250.00
22,000.00	John Cowdin Fund,	22,000.00
25,370.03	John L. Russell Fund,	25,370.03
81,950.54	Henry T. Morgan Fund,	81,950.54
5,000.00	Seth Turner Fund,	5,000.00
30,000.00	William Perkins Fund,	30,000.00
20,000.00	Walter Hastings Fund,	20,000.00
63,729.26	President's Fund,	63,609.81
154.58	Thomas Cotton Fund,	154.11
292,975.57	Retiring Allowance Fund,	301,718.09
110,835.91	William Hayes Fogg Endowment,	80,255.30
78,717.19	William Hayes Fogg Construc'n,	17,927.83
29,059.96	Edwin Conant Bequest,	
51,694.54	Catharine Page Perkins Bequest,	
7,667.33	Gifts for Phillips Brooks House, .	8,758.43
56,554.41	John Parker Fellowships,	56,135.65
11,413.18	Robert Treat Paine Fellowship, .	11,929.05
11,043.64	Harris Fellowship,	11,042.83
11,134.67	John Thornton Kirkland Fellows'p,	10,812.97
11,237.38	James Walker Fellowship,	11,245.29
32,150.58	Rogers Fellowships,	32,478.81
10,996.50	Henry Lee Memorial Fellowship, .	11,043.56
10,437.97	Ozias Goodwin Memorial Fellows'p,	10,459.77
10,898.86	H. B. Rogers Memorial Fellows'p,	10,941.49
11,251.63	John Tyndall Scholarship,	11,210.22
\$1,706,351.24	. . . Amounts carried forward . . .	\$1,628,530.69

Principal, Aug. 1, 1894.		Principal, July 31, 1895.
\$1,706,351.24	Amounts brought forward, . . .	\$1,628,530.69
1,398.70	Frank Bolles Memorial Fund, . .	1,482.66
6,636.53	George B. Sohler Prize Fund, . .	6,512.12
2,485.90	Sumner Prize Fund,	2,598.27
2,338.00	John O. Sargent Prize Fund, . .	2,343.68
3,162.10	Robert N. Toppan Prize Fund, .	3,305.02
1,054.93	James Gordon Bennett Prize F'd,	1,102.62
200.00	Robert Treat Paine Prizes, . .	200.00
150.00	Dante Prizes,	100.00
7,867.83	Lectures on Political Economy Fund,	8,223.46
2,510.07	Ingersoll Lecture Fund,	5,168.72
964.04	Gifts for Semitic Collection, . . .	1,532.54
209.85	“ “ “ Library,	17.28
		\$1,661,117.06

COLLEGE FUNDS.

27,748.64	Alford Professorship,	\$27,748.64
28,337.40	Boylston “	28,337.40
21,619.50	Eliot “	21,619.50
10,000.00	Eliot “ (Jon. Phillips' gift),	10,000.00
3,500.01	Erving “	3,500.01
35,990.99	Fisher “	35,990.99
20,217.08	Hersey “	20,217.08
21,744.18	Hersey “ (Thomas Lee's gift),	21,744.18
3,747.33	Hollis “ (Mathematics), . . .	3,747.33
34,517.60	Hollis “ (Divinity),	34,517.60
43,062.93	McLean “	43,062.93
21,000.00	Perkins “	21,000.00
25,020.19	Plummer “	25,020.19
52,500.00	Pope “	52,500.00
56,441.25	Rumford “	56,441.25
23,139.83	Smith “	23,139.83
192,815.84	Gurney Fund,	192,531.12
16,240.38	Fund for Permanent Tutors, . . .	16,240.38
15,796.97	Lee Fund for Reading,	15,796.97
145,000.00	Class Subscription Fund, . . .	150,117.54
3,026.05	Paul Dudley Fund for Lectures,	3,062.83
31,500.00	Jonathan Phillips F'd (unrest'd),	31,500.00
1,050.00	John A. Blanchard “ “	1,050.00
6,231.73	John W. P. Abbot “ “	6,513.42
13,554.05	Daniel H. Pierce “ “	13,615.31
6,230.00	Daniel Austin “ “	6,230.00
1,408.70	Schol. & Benef. money returned (bal.),	1,985.90
343.60	Henry Flynt's Bequest,	342.55
3,549.91	Abbot Scholarship,	3,560.37
1,316.67	Alford “	1,376.20
\$2,601,980.02	Amounts carried forward, . . .	\$872,509.52 \$1,661,117.06

Principal, Aug. 1, 1894.		Principal, July 31, 1895.	
\$2,601,980.02	. . Amounts brought forward, . . .	\$872,509.52	\$1,661,117.06
5,379.81	Bartlett Scholarship,	5,372.99	
5,736.25	Bassett "	5,695.52	
12,240.24	Bigelow "	12,376.83	
111,513.07	Bowditch "	111,636.80	
1,188.50	Bright " (balance), . .	1,385.16	
	Burr "	15,254.83	
3,620.94	Browne "	3,634.6	
6,191.08	Ruluff S. Choate Scholarship, . .	6,170.91	
7,686.75	Class of 1802 Scholarship, . . .	7,734.20	
3,019.22	" 1814 "	3,030.68	
5,891.41	" 1815 "(Kirkland), . . .	5,957.68	
4,124.59	" 1817 "	4,161.04	
3,401.20	" 1828 "	3,404.93	
4,403.04	" 1835 "	4,452.06	
4,125.70	" 1841 "	4,112.19	
4,905.15	" 1852 "(Dana),	4,860.20	
10,000.00	" 1856 "	10,000.00	
3,475.18	" 1867 "	3,432.25	
10,961.50	Crowninshield "	10,990.32	
800.00	W. H. Cudworth " (balance),	600.00	
5,492.74	George & Martha Derby Sch.,	5,491.02	
2,201.44	Julius Dexter Scholarship, . . .	2,300.93	
5,454.61	W. S. Eliot "	5,451.18	
1,016.12	Fall River "	1,134.66	
5,966.68	Farrar "	5,986.39	
10,522.61	Richard Augustine Gambrill Scholarship,	10,598.25	
6,004.82	Charles Haven Goodwin Sch.,	5,976.25	
3,901.78	Greene Scholarship,	3,978.15	
300.00	Price Greenleaf Sch. (balance),	100.00	
	Ebenezer Rockwood Hoar Sch.,	10,056.50	
5,992.21	Levina Hoar Scholarship,	6,013.05	
11,037.55	Hodges "	11,336.47	
5,638.70	Hollis "	5,693.58	
66.66	George E. Lowell " (balance),		
5,250.17	Matthews "	5,174.10	
5,421.76	Merrick "	5,466.83	
7,643.08	Morey "	7,688.54	
5,370.26	Lady Mowlson "	5,346.32	
6,708.02	Pennoyer "	6,665.54	
3,949.50	Perkins "	3,978.04	
1,053.51	Rodger "	1,101.15	
3,415.15	Henry B. Rogers "	3,369.51	
4,554.60	Edward Russell "	5,283.09	
5,159.45	Sales "	5,159.30	
4,280.67	Saltonstall "	4,274.17	
\$2,927,045.74	. . Amounts carried forward, . . .	\$1,224,395.74	\$1,661,117.06

Principal,
Aug. 1, 1894.

Principal July 31, 1895.

\$2,927,045.74	Amounts brought forward, . . .	\$1,224,395.74	\$1,661,117.06
6,844.45	Mary Saltonstall Scholarship, . .	6,803.80	
3,240.83	Sever Scholarship,	3,237.32	
10,156.21	Sewall "	10,215.26	
47,586.34	Shattuck "	47,737.23	
5,816.27	Slade "	5,829.15	
4,070.72	Story "	4,104.73	
2,712.91	Stoughton Scholarship,	2,777.05	
4,058.55	Gorham Thomas "	4,042.02	
7,182.59	Toppan "	7,207.26	
25,035.48	Townsend "	24,983.74	
4,143.37	Walcott "	4,097.29	
10,580.26	Whiting "	10,725.14	
9,897.36	Exhibitions,	1,393.59	
1,917.89	Palfrey Exhibition,	2,004.58	
10,376.15	Henry B. Humphrey Fund, . .	10,345.15	
	Robert Keyne Fund,	1,945.44	
	William Brattle "	1,245.85	
	Henry Gibbs "	347.94	
	Ephraim Flynt "	336.70	
	Thomas Danforth Fund,	748.25	
	Anne Mills "	157.12	
	Thomas Fitch "	561.19	
	Benjamin Wadsworth Fund, . .	202.01	
	John Ellery "	299.28	
	Henry Flynt "	112.23	
	Joseph Sewall "	149.65	
	Nathaniel Appleton "	419.04	
	Edward Holyoke "	269.38	
	Mary Lindall "	748.25	
1,200.00	Samuel Ward Fund,	1,200.00	
1,938.60	John Glover "	2,026.24	
11,079.33	Quincy Tufts "	11,155.10	
5,417.04	Day "	5,448.73	
10,461.73	Munroe "	10,534.61	
5,617.46	Price Greenleaf Aid (balance,) .	7,071.36	
4,028.14	Boylston Prizes for Elocution, . .	4,015.21	
13,644.71	Bowdoin Prizes for Dissertations,	13,686.46	
1,038.28	Sales Prize,	1,040.20	
1,427.56	Hopkins Gift for "Deturs" (bal.),	1,462.05	
801.90	Chauncey Wright Fund,	838.15	
50,000.00	Increase S. Wheeler Fund, . . .	50,000.00	
1,033.57	Fund for Religious Services, . . .	1,033.57	
15,073.82	John E. Thayer Fund,	15,346.53	
6,730.90	Classical Publ. F'd of Class of 1856,	6,735.14	
39,780.00	Botanic Department Fund,	39,780.00	
60,882.31	Lowell Fund for a Botanic Garden,	66,382.31	
35,153.65	Herbarium Fund,	30,479.60	

\$3,345,974.13 . . Amounts carried forward, . . . \$1,645,676.64 \$1,661,117.06

Principal, Aug 1, 1894.		Principal, July 31, 1895.	
\$3,345,974.13	. . Amounts brought forward, . . .	\$1,645,676.64	\$1,661,117.06
75,000.00	Physical Laboratory Endowment, . .	75,000.00	
11,680.05	Henry Warren Torrey Fund, . .	12,207.99	
8,328.10	Joseph Lovering " . .	8,253.92	
5,814.39	Cyrus M. Warren " . .	6,027.18	
1,519.47	Jefferson Physical Lab'y (balance),	1,917.62	
1,220.48	Sundry Gifts (unexpended balances),	854.51	
596.09	Gifts for Classical Library "	425.08	
107.03	" " Historical " "	36.52	
1,260.97	" " Geological Dep't "	310.97	
2,576.01	" " Sanskrit " . . .	1,486.46	1,752,196.89

LIBRARY FUNDS.

100,000.00	Eben Wright Fund,	\$100,000.00	
25,938.92	Constantius "	25,916.68	
500.00	Jarvis "	500.00	
11,925.34	Daniel Treadwell Fund,	11,925.34	
10,519.50	Subscription for Library (1859), . .	10,525.63	
2,146.60	Bowditch Fund,	2,109.88	
195.28	Bright " (balance),	101.66	
27,767.11	Edwin Conant Fund,	27,704.18	
5,273.33	Denny "	5,275.97	
5,346.53	Farrar "	5,331.81	
3,194.57	Haven "	3,177.25	
10,033.33	Hayes "	10,037.46	
5,262.70	Hayward "	5,258.62	
2,381.48	Hollis "	2,371.76	
2,175.25	Homer "	2,199.33	
5,279.59	Lane "	5,320.45	
23,643.17	Lowell "	23,804.78	
61,364.44	Minot "	62,797.27	
7,105.72	Lucy Osgood "	7,130.84	
6,999.37	Mary Osgood "	6,975.48	
3,957.26	Sales "	4,071.31	
5,404.28	Salisbury "	5,380.82	
20,186.13	Sever "	19,986.50	
3,953.99	Shapleigh "	3,991.58	
37,787.30	Sumner "	37,387.06	
5,005.37	Tucker "	5,002.38	
5,268.12	Ward "	5,296.77	
15,836.29	Walker "	15,822.68	
314.23	Wales Gift (balance),	410.59	
625.72	Waterson Gift (balance),	654.02	
10,254.31	J. Huntington Wolcott Fund, .	10,314.75	
243.80	Sundry Gifts, etc. (unexpended bals.),	331.78	
	Appropriation for Alterations of		
	Gore Hall,	22,239.55	
14,104.54	Gifts for Book Stacks,	15,730.77	465,084.95
\$3,894,070.29	. . Amounts carried forward,	\$3,878,398.90	

Principal,
Aug. 1, 1894.

Principal, July 31, 1895.

\$3,894,070.29 . . Amounts brought forward, \$3,878,398.90

DIVINITY SCHOOL FUNDS.

27,111.59	Divinity School (balance),	\$33,507.64	
37,583.74	Bussey Professorship,	37,583.74	
16,015.81	Parkman "	16,015.81	
6,008.43	Hancock "	6,008.43	
50,345.73	Winn Prof. of Ecclesiastical History,	50,845.73	
33,797.09	Frothingham Professorship,	35,324.71	
20,280.38	Dexter Lectureship,	20,280.38	
9,184.69	Henry Lienow Fund,	9,184.69	
5,250.00	Mary P. Townsend Fund,	5,250.00	
2,100.00	Winthrop Ward "	2,100.00	
1,050.00	Samuel Hoar "	1,050.00	
1,050.00	Abraham W. Fuller "	1,050.00	
1,050.00	Caroline Merriam "	1,050.00	
7,875.00	Joseph Baker "	7,875.00	
40,000.00	Th. Tileston of New York Endowm't,	40,000.00	
10,000.00	Henry P. Kidder Fund,	10,000.00	
17,000.00	Oliver Ames "	17,000.00	
1,000.00	Abbey Crocker Richmond F'd,	1,000.00	
71,427.02	New Endowment (1879),	71,427.02	
1,000.00	John L. Russell Fund,	1,000.00	
1,577.28	John W. Quinby "	1,648.56	
10,000.00	William B. Spooner Fund,	10,000.00	
5,000.00	Edwin Conant "	5,000.00	
911.34	Lewis Gould "	911.34	
2,177.95	Joshua Clapp "	2,177.95	
525.00	Hannah C. Andrews "	525.00	
1,000.00	Adams Ayer "	1,000.00	
890.00	Daniel Austin "	890.00	
518.57	Louisa J. Hall "	534.60	
1,004.52	Rushton Dashwood Burr Fund,	2,921.62	
14,309.03	Jackson Foundation,	14,315.83	
5,301.05	Thomas Cary Scholarships,	5,220.66	
2,539.65	George Chapman "	2,554.46	
4,218.32	Joshua Clapp "	4,228.97	
4,882.76	J. Henry Kendall "	4,970.13	
3,308.39	Nancy Kendall "	3,364.59	
13,098.98	Abner W. Buttrick Fund,	13,104.39	
1,050.00	William Pomroy "	1,050.00	
3,339.06	Beneficiary money returned,	3,489.98	445,461.23

\$4,328,851.67 . . Amounts carried forward, \$4,323,860.13

Principal,
Aug. 1, 1894.

Principal, July 31, 1895.

\$4,328,851.67 . . Amounts brought forward, \$4,323,860.13

LAW SCHOOL FUNDS.

87,435.97	Law School (balance),	\$112,004.08	
15,750.00	Dane Professorship,	15,750.00	
23,979.82	Bussey "	23,979.82	
8,340.81	Royall "	8,340.81	
94,994.97	Weld "	94,994.97	
54,836.16	Bemis "	57,314.75	
47,021.25	Law School Book Fund,	47,021.25	
160.00	Scholarship money returned,	160.00	359,565.68

LAWRENCE SCIENTIFIC SCHOOL FUNDS.

5,382.42	Lawrence Scientific School (balance),		
40,805.73	Professorship of Engineering, . . .	\$40,805.73	
61,536.43	Abbott Lawrence Fund,	61,536.43	
50,375.00	James Lawrence "	50,375.00	
30,686.85	John B. Barringer "	30,686.85	
5,666.33	George A. Gardner "	5,496.01	188,900.02

MUSEUM OF COMPARATIVE ZOOLOGY FUNDS.

50,000.00	Gray Fund for Zoölogical Museum,	50,000.00	
297,933.10	Agassiz Memorial Fund, } . . .	297,933.10	
7,594.01	Teachers' and Pupils' " } . . .	7,594.01	
117,469.34	Permanent Fund,	117,469.34	
7,740.66	Humboldt "	7,740.66	
5,239.97	Virginia Barret Gibbs Sch., . .	5,476.82	
100,340.00	Sturgis Hooper Fund,	100,270.00	586,483.93

MEDICAL SCHOOL FUNDS.

83,694.12	Medical School (balance),	\$78,570.27	
19,192.65	Jackson Medical Fund,	19,192.65	
17,129.20	Geo. C. Shattuck "	17,129.20	
13,601.72	Warren F'd for Anatom'l Museum,	13,775.29	
3,389.59	Boylston Fund for Medical Prizes,	3,492.82	
4,159.63	Boylston " " " Books,	3,942.42	
1,171.24	Medical Library Fund,	1,224.17	
2,000.00	Quincy Tufts Medical Fund, . .	2,000.00	
25,512.68	Edward M. Barringer " . .	25,512.68	
15,765.11	Mary W. Swett " . .	15,765.11	
20,000.00	Samuel W. Swett " . .	20,000.00	
1,836.08	Samuel E. Fitz " . .	1,836.08	
6,416.22	J. Ingersoll Bowditch " . .	6,221.80	

\$5,656,008.73 . . Amounts carried forward, . . . \$208,662.49 \$5,458,809.76

Principal, Aug. 1, 1894.		Principal, July 31, 1895.	
\$5,656,008.73	. . Amounts brought forward, . . .	\$208,662.49	\$5,458,809.76
25,000.00	Henry Willard Williams Fund,	25,000.00	
38,750.00	New Subscription Fund (1888), . .	38,750.00	
157.21	John Foster income for Medical Students (balance),	7.21	
5,457.62	D. W. Cheever Scholarship, . .	5,504.32	
6,040.40	C. M. Jones " . .	6,113.41	
6,061.78	Isaac Sweetser " . .	6,135.78	
3,802.95	Charles Pratt Strong Scholars'p, Alfred Hosmer Linder " . .	3,874.85 5,018.85	
5,400.60	Geo. Cheyne Shattuck Memorial Fellowship,	5,194.73	
5,155.84	John Ware Memorial Fellowship,	5,163.89	
5,391.73	Chas. Eliot Ware " " . .	5,410.45	
3,761.62	Ellis Gifts (balance),	3,186.61	318,022.59

DENTAL SCHOOL FUNDS.

12,267.00	Dental School (balance),	\$12,370.17	
15,255.85	Dental School Endowment,	15,255.85	
11,620.45	Gifts for Building,	14,678.47	42,304.49

OBSERVATORY FUNDS.

110,293.88	Edward B. Phillips Fund, . . .	\$110,293.88	
21,000.00	James Hayward " . . .	21,000.00	
30,421.74	David Sears " . . .	31,109.28	
10,507.65	Josiah Quincy " . . .	9,783.86	
2,000.00	Charlotte Harris " . . .	2,000.00	
5,000.00	Thomas G. Appleton " . . .	5,000.00	
13,380.00	Augustus Story " . . .	13,380.00	
50,000.00	Observatory Endowment (1882), . .	50,000.00	
273,557.86	Robert Treat Paine Fund, . . .	273,557.86	
50,000.00	Paine Professorship,	50,000.00	
208,573.99	Uriah A. Boyden Fund, . . .	209,485.36	
21,007.37	Bruce Gift (balance),	6,886.14	
2,500.00	J. Ingersoll Bowditch Fund, . .	2,500.00	
1,077.97	Draper Memorial (balance), . .	2,503.06	787,499.44

OTHER FUNDS FOR SPECIAL PURPOSES.

413,092.80	Bussey Trust (income thereof, $\frac{1}{2}$ to Bussey Institution, $\frac{1}{4}$ to Law Sch'l, and $\frac{1}{4}$ to Divinity School),	\$392,709.18	
15,923.03	Bussey Institution (balance), . . .	14,231.38	
609.02	Bussey Building Fund,		
\$7,029,077.09	. . Amounts carried forward, . . .	\$406,940.56	\$6,606,636.28

Principal,
Aug. 1, 1894.

Principal, July 31, 1895.

\$7,029,077.09	. . Amounts brought forward, . . .	\$406,940.56	\$6,606,636.28
156,414.48	James Arnold Fund,	156,767.97	
10,981.84	Arboretum Construction Gifts, . . .	6,502.60	
50,000.00	Bright Legacy,	50,000.00	
38,902.03	Robert Troup Paine Fund, . .	40,197.03	
42,000.00	James Savage " . .	42,000.00	
3,171.50	John Foster " . .	3,171.50	
29,939.33	Henry Harris " . .	29,939.33	
16,370.78	Gray Fund for Engravings, . .	16,747.59	
30,925.54	John Witt Randall Fund, . .	31,639.70	
4,612.99	Gospel Church " . .	4,821.50	
3,725.00	Fund of the Class of 1853 , . . .	3,725.00	
1,000.00	" " " 1834 , . . .	1,000.00	
727,206.21	Price Greenleaf Fund,	727,206.21	
5,150.97	O. W. Doe Scholarship,	5,183.80	
5,060.50	Lewis and Harriet Hayden Sch.,	5,089.26	
	Robert C. Winthrop Scholarship,	5,075.35	
27,945.94	Gore Annuity Fund,	28,909.10	
4,311.88	Lucy Osgood Annuity Fund, . .	4,086.78	
3,685.00	Geo. William Sawin " . .	3,685.00	
10,508.15	Huntington Frothingham Wol-		
	cott Fund,	10,427.85	
72,890.47	Charles L. Hancock Fund, . .	74,040.47	
	Bursar's Sundry Accounts,	24,909.35	
70,129.83	Gains and Losses for General Invest-		
	ments,	70,129.83	
2,065.00	Sundry Balances,	1,625.00	\$1,753,820.78

FUNDS IN TRUST FOR PURPOSES NOT
CONNECTED WITH THE COLLEGE.

16,396.61	Daniel Williams Fund for the con-		
	version of the Indians,	\$16,342.88	
4,797.58	Sarah Winslow Fund for the		
	Minister and Teacher at Tyngs-		
	borough, Mass.,	4,781.89	21,124.77
<hr/> \$8,367,268.72		<hr/> \$8,381,581.83	

Changes in the Funds during the year ending July 31, 1895.

Total amount of Funds and balances, July 31, 1895, as before stated,	\$8,381,581.83	
Total amount of Funds and balances, August 1, 1894, as before stated,	8,367,268.72	
Showing a total increase during the year of		<u>\$14,313.11</u>
Which is made up as follows :—		
Gifts forming new Funds or increasing old ones, . . .	\$131,910.66	
Increase of Funds established during the year, . . .	282.41	
Credit balances created,	54,691.23	
	<u>\$186,884.30</u>	
Deduct from this amount		
Decrease more than increase of Funds and balances, which appear both at the beginning and end of the year, . . .	\$91,141.01	
Sundry balances used up,	81,430.18	
	<u>172,571.19</u>	
		<u>\$14,313.11</u>
<hr/>		
Net decrease of Funds and balances as above, . . .	\$172,571.19	
Less increase as above,	54,973.64	
	<u></u>	
Leaving amount of the net decrease of the Funds and balances, excluding gifts for capital account, as is also shown in the following table,	<u>\$117,597.55</u>	

Statement showing Changes in the Different Funds

Increase of Funds and balances which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

UNIVERSITY.

Stock Account (so called),	\$4,409.40	
Retiring Allowance Fund,	8,742.52	
Henry Lee Memorial Fellowship,	47.06	
H. B. Rogers " "	42.63	
Ozias Goodwin " "	21.80	
Robert Treat Paine "	515.87	
James Walker "	7.91	
Rogers Fellowship,	328.23	
Lectures on Political Economy Fund,	355.63	
Gifts for Phillips Brooks House,	1,091.10	
Sumner Prize Fund,	112.37	
John O. Sargent Prize Fund,	5.68	
James Gordon Bennett Prize Fund,	47.69	
Robert N. Toppan " "	142.92	
Frank Bolles Memorial Fund,	63.96	
Ingersoll Lecture Fund,	158.65	
Gifts for Semitic Collection,	568.50	\$16,661.92

COLLEGE.

Daniel H. Pierce Fund,	\$61.26	
Paul Dudley "	36.78	
John W. P. Abbot Fund,	281.69	
Abbot Scholarship,	10.46	
Alford "	59.53	
Bigelow "	136.59	
Bowditch "	123.73	
Bright " (balance),	196.66	
Browne "	13.67	
Class of 1820 Scholarship,	47.45	
" 1815 " (Kirkland),	66.27	
" 1828 "	3.73	
" 1835 "	49.02	
" 1814 "	11.46	
" 1817 "	36.45	
Crowninshield "	28.82	
Julius Dexter "	99.49	
Farrar "	19.71	
Fall River "	18.54	
R. A. Gambrill "	75.64	
Greene "	76.37	
Levina Hoar "	20.84	

Amounts carried forward, \$1,474.16 \$16,661.92

and balances during the year ending July 31, 1895.

Decrease of Funds and balances which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

UNIVERSITY.

Thomas Cotton Fund,	\$.47	
President's Fund,	119.45	
William Hayes Fogg Endowment,	580.61	
William Hayes Fogg " (by transfer to construction account),	30,000.00	
William Hayes Fogg Construction,	60,789.36	
John Thornton Kirkland Fellowship,	321.70	
John Tyndall Scholarship,	41.41	
Parker Fellowships,	418.76	
Harris " . . . . .	.81	
Dante Prizes,	50.00	
George B. Schier Prize Fund,	124.41	
Gifts for Semitic Library,	192.57	\$92,639.55

COLLEGE.

Henry Flynt Bequest,	\$1.05	
Gorham Thomas Scholarship,	16.53	
Joseph Lovering Fund,	74.18	
Sundry gifts (unexpended balances),	365.97	
Gifts for Classical Library,	171.01	
" " Historical "	70.51	
Gurney Fund,	284.72	
R. S. Choate Scholarship,	20.17	
Class of 1841 "	13.51	
" 1852 " (Dana)	44.95	
" 1867 "	42.93	
W. S. Eliot "	3.43	
Charles Haven Goodwin Scholarship,	28.57	
Matthews Scholarship (balance),	76.07	
Sever Scholarship,	3.51	
Bartlett Scholarship,	6.82	
Bassett "	40.73	
Cudworth " (balance),	200.00	
G. and M. Derby Scholarship,	1.72	
Price Greenleaf " (balance),	200.00	
Lady Mowlson "	23.94	
Pennoyer "	42.48	
H. B. Rogers "	45.64	
Sales " . . . . .	.15	
Saltonstall "	6.50	

Amounts carried forward, \$1,785.09 \$92,639.55

*Statement showing Changes in the Different Funds***INCREASE.**

Amounts brought forward,	\$1,474.16	\$16,661.92
Hodges Scholarship,	298.92	
Hollis "	54.88	
Merrick "	45.07	
Morey "	45.46	
Perkins "	28.54	
Rodger "	47.64	
Edward Russell Scholarship,	228.49	
Sewall "	59.05	
Shattuck "	150.89	
Slade "	12.88	
Story "	34.01	
Stoughton "	64.14	
Toppan "	24.67	
Whiting "	144.88	
John Glover Fund,	87.64	
Palfrey Exhibition,	86.69	
Scholarship and Beneficiary money returned (transferred from exhibitions),	577.20	
Quincy Tufts Fund,	75.77	
Day "	31.69	
Munroe "	72.88	
Price Greenleaf Aid (balance),	1,453.90	
Bowdoin Prizes,	41.75	
Sales "	1.92	
Chauncey Wright Fund,	36.25	
Hopkins Gift for "Deturs" (balance),	34.49	
Classical Publication Fund of Class of 1856,	4.24	
Henry Warren Torrey Fund,	527.94	
Cyrus M. Warren "	212.79	
John E. Thayer "	272.71	
Jefferson Physical Laboratory (balance),	398.15	6,629.69

LIBRARY.

Denny Fund,	\$2.64
Hayes "	4.13
Lane "	40.86
Homer "	24.08
Lowell "	161.61
Minot "	1,432.83
Sales "	114.05
Lucy Osgood Fund,	25.12
Shapleigh "	37.59
Ward "	28.65

Amounts carried forward, \$1,871.56 \$23,291.61

and balances during the year ending July 31, 1895. (Continued.)

DECREASE.

Amounts brought forward,	\$1,785.09	\$92,639.55
Mary Saltonstall Scholarship,	40.65	
Townsend "	51.74	
Walcott "	46.08	
Henry B. Humphrey Fund,	31.00	
Exhibitions,	710.35	
" (by transfer to other accounts),	7,793.42	
Boylston Prizes,	12.93	
Herbarium Fund,	4,674.06	
Gifts for Sanskrit Department,	1,089.55	
" Geological "	950.00	17,184.87

LIBRARY.

Constantius Fund,	22.24	
Bowditch "	36.72	
Bright " (balance),	93.62	
Hayward "	4.08	
Hollis "	9.72	
Conant "	62.93	
Farrar "	14.72	
Mary Osgood "	23.89	
Haven "	17.32	
Salisbury "	23.46	
Sever "	199.63	
Sumner "	400.24	
Tucker "	2.99	
Walker "	13.61	925.17

DIVINITY SCHOOL.

Thomas Cary Scholarships,	80.39
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LAWRENCE SCIENTIFIC SCHOOL.

Balance,	\$5,382.42	
George A. Gardner Fund,	170.32	5,552.74

MUSEUM OF COMPARATIVE ZOOLOGY.

Sturgis Hooper Fund,	70.00
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MEDICAL SCHOOL.

Balance,	\$5,123.85	
Boylston Fund for Medical Books,	217.21	
J. Ingersoll Bowditch Fund,	194.42	
Geo. Cheyne Shattuck Memorial Fellowship,	205.87	
John Foster inc. for Med. Students (balance),	150.00	
Ellis Gift (balance),	575.01	6,466.36

Amount carried forward, \$122,919.08

*Statement showing Changes in the Different Funds***INCREASE.**

Amounts brought forward.	\$1,871.56	\$23,291.61
J. Huntington Wolcott Fund,	60.44	
Waterston Gift (balance),	28.30	
Wales Gift (balance),	96.36	
Gifts for Book Stacks,	1,626.23	
Sundry Gifts, etc. (unexpended balances),	87.98	
Subscription for Library,	6.13	3,777.00

DIVINITY SCHOOL.

Balance,	\$6,396.05	
Frothingham Professorship,	1,527.62	
Winn "	500.00	
John W. Quinby Fund,	71.28	
Jackson Foundation,	6.80	
George Chapman Scholarship,	14.81	
Joshua Clapp "	10.65	
J. H. Kendall "	87.37	
Nancy Kendall "	56.20	
A. W. Buttrick Fund,	5.41	
Beneficiary Money returned (balance),	150.92	
Louisa J. Hall Fund,	16.03	
Rushton Dashwood Burr Fund,	17.10	8,860.24

LAW SCHOOL.

Balance,	\$24,568.11	
Bemis Professorship,	2,478.59	27,046.70

MUSEUM OF COMPARATIVE ZOÖLOGY.

Virginia Barret Gibbs Scholarship,	236.85
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MEDICAL SCHOOL.

Boylston Fund for Medical Prizes,	\$103.23	
Charles Eliot Ware Memorial Fellowship,	18.72	
John Ware " "	8.05	
D. W. Cheever Scholarship,	46.70	
C. M. Jones "	73.01	
Isaac Sweetser "	74.00	
C. P. Strong "	71.90	
Warren Fund for Anatomical Museum,	173.57	
Medical Library Fund,	52.93	622.11
Amount carried forward,		\$63,834.51

and balances during the year ending July 31, 1895. (Continued.)

DECREASE.

Amount brought forward, \$122,919.08

OBSERVATORY.

Josiah Quincy Fund,	\$723.79	
Bruce Gift (balance),	14,121.23	14,845.02

OTHER FUNDS FOR SPECIAL PURPOSES.

Lucy Osgood Annuity Fund,	\$225.10	
Daniel Williams "	53.73	
Sarah Winslow "	15.69	
Bussey Institution (balance),	1,691.65	
Arboretum Construction Gifts,	4,479.24	
Huntington Frothingham Wolcott Fund, . . .	80.30	
Sundry balances,	440.00	
Bussey Trust,	20,383.62	27,369.33
		<u>\$165,133.43</u>

Sundry balances used up.

Catharine Page Perkins bequest,	\$51,694.54	
Edwin Conant "	29,059.96	
Bussey Building Fund (transferred to Bussey Institution,)	609.02	
George E. Lowell Scholarship (balance), . . .	66.66	81,430.18

Amount carried forward, \$246,563.61

*Statement showing Changes in the Different Funds***INCREASE.**

Amount brought forward, \$63,834.51

DENTAL SCHOOL.

Balance,	\$103.17	
Gifts for Building,	3,058.02	3,161.19

OBSERVATORY.

David Sears Fund,	\$687.54	
Uriah A. Boyden Fund,	911.37	
Draper Memorial (balance),	1,425.09	3,024.00

FUNDS FOR SPECIAL PURPOSES.

James Arnold Fund,	\$353.49	
Robert Troup Paine Fund,	1,295.00	
Gospel Church "	208.51	
Gore Annuity "	963.16	
John Witt Randall "	714.16	
O. W. Doe Scholarship "	32.83	
Gray Fund for Engravings,	376.81	
Lewis and Harriet Hayden Scholarship,	28.76	3,972.72
		<u>\$73,992.42</u>

Increase of Funds established during the year.

Burr Scholarships,	\$131.71	
Ebenezer Rockwood Hoar Scholarship,	56.50	
Alfred Hosmer Linder "	18.85	
Robert C. Winthrop "	75.35	282.41

Credit balances created.

Robert Keyne Fund,	\$1,945.44	
William Brattle "	1,245.85	
Henry Gibbs "	347.94	
Ephraim Flynt "	336.70	
Thomas Danforth Fund,	748.25	
Anne Mills "	157.12	
Thomas Fitch "	561.19	
Benjamin Wadsworth Fund,	202.01	
John Ellery "	299.28	
Henry Flynt "	112.23	
Joseph Sewall "	149.65	
Nathaniel Appleton "	419.04	
Edward Holyoke "	269.38	
Mary Lindall "	748.25	
Bursar's Sundry Accounts,	24,909.35	
Appropriation for Gore Hall alterations,	22,239.55	54,691.23

Balance, which is the net decrease of the Funds and
balances for the year ending July 31, 1895, exclud-
ing gifts for capital account,

117,597.55

Total, \$246,563.61

and balances during the year ending July 31, 1895. (Continued.)

DECREASE.

Amount brought forward, \$246,563.61

Total, \$246,563.61

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every Fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every Fund, in case that sum be either less or more than the actual income of the Fund. If the object to which the income of a Fund is to be applied be a general one, — like salaries, for example, — no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 71.

TABLE NO. I.
THE UNIVERSITY.

RECEIPTS.

Income of the unappropriated fund heretofore called the		
Stock Account, from special investment, . . .	\$564.64	
Interest on balance,	3,844.76	\$4,409.40
Income of the following funds :—		
Insurance and Guaranty, from special investment, .	6,402.08	
Israel Munson,	711.90	
Leonard Jarvis,	762.61	
John C. Gray, from special investment,	1,130.00	
George B. Dorr, from special investment,	5,241.71	
Francis E. Parker, from special investment, .	5,144.53	
Stanton Blake,	226.00	
Charlotte F. Blanchard,	215.65	
Joseph Lee, from special investment,	452.00	
William F. Weld,	4,520.00	
Henry P. Kidder,	452.00	
George Draper,	2,190.34	
Isaac Sweetser,	1,261.85	
George Baxter Hyde,	65.90	
Harvard Ellis,	339.00	
Samuel D. Bradford,	237.29	
John Cowdin, from special investment,	1,942.15	
John L. Russell (part of),	1,056.32	
Henry T. Morgan,	3,704.19	
Henry Harris, $\frac{1}{2}$ of income,	676.62	
Seth Turner,	226.00	
William Perkins,	1,356.00	
Walter Hastings, from special investment, . . .	1,757.05	
President's,	2,880.55	
Thomas Cotton,	6.64	
Amount carried forward,	\$47,367.78	

TABLE NO. I, CONTINUED.

RECEIPTS.

Amount brought forward,	\$47,367.78	
Income of the following funds (<i>continued</i>):—		
Retiring Allowance,	13,242.52	
Parker Fellowships,	2,556.24	
John Thornton Kirkland Fellowship,	503.30	
Harris Fellowship,	499.19	
James Walker Fellowship,	507.91	
Rogers Fellowships,	1,453.23	
Robert Treat Paine Fellowship,		
Interest,	\$515.87	
Repayment,	<u>250.00</u>	765.87
John Tyndall Scholarship,	508.59	
Henry Lee Memorial Fellowship,	497.06	
Ozias Goodwin “ “	471.80	
Henry Bromfield Rogers Memorial Fellowship,	492.63	
Sumner Prize,	112.37	
George B. Sohier Prize,	250.00	
John O. Sargent Prize,	105.68	
James Gordon Bennett Prize,	47.69	
Robert N. Toppan Prize,	142.92	
Lectures on Political Economy,	355.63	
Ingersoll Lecture,	158.65	
Frank Bolles Memorial,	63.96	
William Hayes Fogg Endowment,	3,653.79	
“ “ “ Construction,	1,258.28	
Edwin Conant Bequest,	118.79	
Catherine Page Perkins Bequest,	177.07	
Gifts for Phillips Brooks House,	91.10	\$75,402.05
For immediate use.		
Gifts for Phillips Brooks House,	\$1,000.00	
“ “ cases for Semitic Collection,	875.00	
“ “ Semitic Library,	24.50	
Sale of duplicate book, Semitic Library,	1.50	
Edwin Conant Bequest,	<u>1,220.14</u>	3,121.14
Balance remaining after dividing the net income among the Funds,	\$285.69	
For care of the Sarah Winslow Fund,	5.82	
Sale of Catalogues, Calendars, Directories, &c.,	1,819.36	
Sale of grass and wood,	29.50	
Rent of houses in No. Harvard St., Brighton,	293.00	
Use of houses by College officers,	1,175.00	
Examination fees for degrees of Ph.D. and S.D., . . .	<u>120.00</u>	3,728.37
		<u>\$82,251.56</u>

TABLE NO. I, CONTINUED.

PAYMENTS.

Overseers' Expenses.

Advertising, postage, &c.,	\$538.10	
Printing President's Annual Report,	1,238.00	
Printing Treasurer's " "	249.00	
Printing other reports, and auditing Treasurer's accounts,	207.00	\$2,232.10

Office Expenses.

President's,	\$1,237.52	
Treasurer's,	1,287.91	
Bursar's,	2,953.37	
Publication Agent's,	1,250.45	
Supt. of Buildings' and Janitor's,	47.90	
Corporation Rooms (fuel, rent, furniture, &c.), . .	2,543.90	9,321.05

Salaries.

President,	\$8,007.11	
Treasurer and Deputy Treasurer,	6,000.00	
Assistant Secretary of the University,	1,500.00	
Secretary of the Board of Overseers,	200.00	
Bursar,	3,500.00	
Publication Agent,	1,500.00	
Bursar's Assistant,	1,500.00	
Clerks Treasurer's office,	3,800.00	
Superintendent of Buildings,	2,400.00	28,407.11

Memorial Hall and Sanders Theatre.

Repairs, fuel, gas, &c.,	\$1,250.63	
Insurance	549.39	1,800.02

General Expenses.

Advertising,	\$42.73	
Labor, &c., on grounds	4,231.80	
Subscription to Mercantile Agency,	550.00	
Watering streets, and water,	74.40	
Watchmen,	1,693.79	
Freight, diplomas, supplies, and sundries,	601.75	
Printing,	241.86	
Music, Commencement,	185.00	
Annual Catalogue and Calendar,	3,013.12	
Quinquennial Catalogue,	2,140.87	
Repairs and improvements,	1,253.81	
Taxes,	280.80	
Insurance,	50.00	
Stationery and Postage,	468.62	
Legal Expenses,	55.00	14,883.55

Amount carried forward, \$56,643.83

TABLE NO. I, CONTINUED.

PAYMENTS.

Amount brought forward,		\$56,643.83
Sundry payments made from Special Funds.		
On acc't of construction of Perkins		
Hall,	\$56,677.04	
Less amount paid from income of Perkins		
Hall,	<u>4,805.43</u>	\$51,871.61
On acc't of construction of Conant		
Hall,	\$35,594.27	
Less am't paid from income of Conant		
Hall,	<u>5,095.58</u>	30,498.69
On acc't of construction of Fogg Art Museum, . .	92,047.64	
Semitic Collection,	306.50	
" Books and Binding,	218.57	
Retiring Allowance Fund,	4,500.00	
William Hayes Fogg Endowment Fund, . . .	<u>4,234.40</u>	183,677.41
Fellowships and Scholarships.		
John Parker ,	\$2,975.00	
Harris ,	500.00	
John Thornton Kirkland ,	825.00	
James Walker ,	500.00	
Rogers ,	1,125.00	
Morgan ,	2,000.00	
Robert Treat Paine ,	250.00	
Ozias Goodwin Memorial ,	450.00	
Henry Lee Memorial ,	450.00	
Henry Bromfield Rogers Memorial ,	450.00	
John Tyndall Scholarship ,	550.00	
University Scholarships,	<u>2,800.00</u>	12,875.00
Prizes.		
George B. Sohier ,	\$250.00	
John O. Sargent ,	100.00	
Dante ,	<u>50.00</u>	400.00
		<u>\$253,596.24</u>

TABLE NO. II.

THE COLLEGE.

RECEIPTS.

From Term Bills.

Instruction,	\$271,167.50	
Receipts from College dormitories, not included in		
University Houses and Lands,	<u>75,095.48</u>	\$346,262.98
Amount carried forward,		\$346,262.98

TABLE NO. II, CONTINUED.

RECEIPTS.

Amount brought forward,	\$346,262.98	
Income of Scholarship Funds.		
Abbot,	\$160.46	
Alford (accumulating),	59.53	
Bartlett,	243.18	
Bassett,	259.27	
Bigelow,	553.25	
Bowditch,	5,040.39	
Bright, $\frac{1}{2}$ income of Bright Legacy,	1,130.00	
Browne,	163.67	
Burr,	131.71	
Ruluff Sterling Choate,	279.83	
Class of 1802,	347.45	
" 1814,	136.46	
" 1815 (Kirkland),	266.27	
" 1817,	186.45	
" 1828,	153.73	
" 1835,	199.02	
" 1841,	186.49	
" 1852 (Dana),	221.71	
" 1856, from special investment,	600.00	
" 1867,	157.07	
Crowninshield,	495.48	
George and Martha Derby,	248.28	
Julius Dexter (accumulating),	99.49	
Orlando W. Doe,	100.00	
William Samuel Eliot,	246.57	
Fall River,	48.54	
Farrar,	269.71	
Richard Augustine Gambrill,	475.64	
Charles Haven Goodwin,	271.43	
Greene,	176.37	
Price Greenleaf,	3,200.00	
Lewis and Harriet Hayden,	228.76	
Ebenezer Rockwood Hoar,	56.50	
Levina Hoar, for the town of Lincoln,	270.84	
Hodges,	498.92	
Hollis,	254.88	
Henry B. Humphrey,	469.00	
William Merrick,	245.07	
Morey,	345.46	
Lady Mowleson,	242.72	
Pennoyer. Interest,	\$102.33	
Annuity,	145.19	247.52
Amounts carried forward,	\$18,967.12	\$346,262.98

TABLE NO. II, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$18,967.12	\$346,262.98
Perkins,	178.54	
Rodger (accumulating),	47.64	
Henry Bromfield Rogers,	154.36	
Edward Russell (accumulating),	228.49	
Saltonstall,	193.50	
Mary Saltonstall,	309.35	
Savage,	300.00	
Sales,	233.19	
Sever,	146.49	
Sewall,	459.05	
Shattuck,	2,150.89	
Slade,	262.88	
Story,	184.01	
Stoughton (accumulating),	64.14	
Gorham Thomas,	183.47	
Toppan,	324.67	
Townsend,	1,131.58	
Walcott,	187.26	
Whiting,	478.22	26,184.85
Received from the Trustee of the Thayer Scholarships,	\$3,000.00	
“ for the Warren H. Cudworth “	600.00	
“ “ “ George Emerson Lowell “	400.00	
“ “ “ Matthews Scholarships ($\frac{1}{2}$ of net rents of Hall),	5,121.48	9,121.48
Other Beneficiary Funds, income of.		
“ Exhibitions,”	\$60.25	
Robert Keyne,	84.12	
William Brattle,	53.88	
Henry Gibbs,	15.05	
Ephraim Flynt,	14.55	
Thomas Danforth,	32.36	
Anne Mills,	6.78	
Thomas Fitch,	24.27	
Benjamin Wadsworth,	8.72	
John Ellery,	12.93	
Henry Flynt,	4.84	
Joseph Sewall,	6.46	
Nathaniel Appleton,	18.13	
Edward Holyoke,	11.66	
Mary Lindall,	32.36	
Palfrey “Exhibition,”	86.69	
John Glover (accumulating),	87.64	
Amounts carried forward,	\$560.69	\$381,569.31

TABLE NO. II, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$560.69	\$381,569.31
Other Beneficiary Funds, income of (<i>continued</i>).		
Quincy Tufts ,	500.77	
Moses Day ,	244.85	
Munroe ,	472.88	
Price Greenleaf Aid ,	16,383.90	18,163.09
Prize Funds, income of.		
Ward Nicholas Boylston Prizes for Elocution,	\$182.07	
James Bowdoin Prizes for Dissertations,	616.75	
Edward Hopkins Gift for "Deturs."		
From Trustees,	\$214.10	
Interest on unexpended balance,	64.55	278.65
Sales ,	46.92	1,124.39
Funds for Instruction, income of.		
Alford Professorship ,	\$1,254.25	
Boylston "	1,280.83	
Eliot "	977.22	
Erving "	158.20	
Fisher "	1,626.79	
Hersey " $\frac{3}{4}$ inc. of the Fund,	548.28	
Hollis " (Mathematics),	169.36	
Hollis " (Divinity),	1,560.21	
McLean "	1,946.45	
Perkins "	949.20	
Plummer "	1,130.90	
Pope "	2,373.00	
Rumford "	2,551.13	
Smith "	1,045.93	
Fund for Permanent Tutors,	734.05	
Thos. Lee Fund for the Hersey Professorship,	982.83	
Thos. Lee " " Reading,	714.02	
Class Subscription ,	6,554.00	
Henry Flynt ,	14.83	
Paul Dudley Fund ,	136.78	
Gifts for salaries,	950.00	27,658.26
Income of Jonathan Phillips unrestricted Fund,	\$1,423.80	
" " John A. Blanchard " "	47.46	
" " Daniel H. Pierce " "	612.64	
" " J. W. P. Abbot Fund (accumulating),	281.69	
" " John E. Thayer "	681.34	
" " Fund for Religious Services,	46.74	
" " Gurney Fund,	8,715.28	
Amounts carried forward,	\$11,808.95	\$428,515.05

TABLE NO. II, CONTINUED.

RECEIPTS.

Amounts brought forward,		\$11,808.95	\$428,515.05
Income of Classical Publication Fund of the Class of			
1856 ,		304.24	
" " Increase Sumner Wheeler Fund ,		2,260.00	
" " Henry Warren Torrey Fund ,		527.94	
" " The Joseph Lovering Fund for Physical Research,		376.43	
" " Cyrus M. Warren Fund ,		262.79	
" " Chauncey Wright Fund ,		36.25	15,576.60
Hemenway Gymnasium.			
For use of lockers,		\$2,912.00	
Insurance,		6.72	2,918.72
Jefferson Physical Laboratory.			
Income from Endowment,		\$3,390.00	
Interest on unexpended balance,		68.66	3,458.66
Sanskrit Department.			
Additional gift from Henry C. Warren ,		\$750.00	
Interest on unexpended balance,		59.31	809.31
Botanic Garden and Botanic Museum.			
Income of Botanic Department Fund,		\$1,798.06	
" " Lowell Fund ,		2,819.67	
" " John L. Russell Fund ,		22.60	
Use of house,		700.00	
Gifts for present use,		4,000.00	
Sale of botanic material to Radcliffe College, . . .		250.00	9,590.33
Herbarium.			
Income of Fund,		\$1,588.96	
Income of John L. Russell Fund ,		67.80	
Received from Asa Gray's copyrights,		2,814.97	
Sale of check lists and contributions,		16.55	
" " plants, &c.,		87.34	4,575.62
Classical Department.			
Received from the Phormio copyright,			75.00
Sundries.			
For use of rooms by College Society,		\$500.00	
Sale of tickets to Commencement Dinner,		667.00	
" " publications,		720.29	
" " old examination papers,		215.94	
Fees for admission and condition examinations, . .		1,605.00	
Fees for Summer Courses,		\$11,793.35	
Other receipts from Summer Courses,		188.43	11,981.78
Amounts carried forward,		\$15,690.01	\$465,519.29

TABLE NO. II, CONTINUED.

RECEIPTS.

Amounts brought forward,	\$15,690.01	\$465,519.29
Sundries (<i>continued</i>).		
Laboratory fees received.		
Chemistry,	\$8,762.05	
Physics,	3,272.50	
Natural History,	3,215.00	
Philosophy,	90.00	15,339.55
Gifts for books for class-room libraries, &c., . . .	585.53	
" " hymn books,	550.00	
Insurance, Weld Hall,	100.49	32,265.58
		<u>\$497,784.87</u>

PAYMENTS.

Paid the incumbents of the following Scholarships.

Abbot,	\$150.00
Bartlett,	250.00
Bassett,	300.00
Bigelow,	416.66
Bowditch,	4,916.66
Bright,	933.34
Browne,	150.00
Ruluff Sterling Choate,	300.00
Class of 1802,	300.00
" 1814,	125.00
" 1815 (Kirkland),	200.00
" 1817,	150.00
" 1828,	150.00
" 1841,	200.00
" 1852 (Dana),	266.66
" 1856,	600.00
" 1867,	200.00
Crowninshield,	466.66
Warren H. Cudworth,	800.00
George and Martha Derby,	250.00
O. W. Doe,	100.00
William Samuel Eliot,	250.00
Farrar,	250.00
Richard Augustine Gambrill,	400.00
Charles Haven Goodwin,	300.00
Price Greenleaf,	3,200.00
Levina Hoar, for the town of Lincoln,	250.00
Hodges,	200.00

Amount carried forward, \$16,074.98

TABLE NO. II, CONTINUED.

PAYMENTS.

Amount brought forward,	\$16,074.98	
Paid the incumbents of the following Scholarships.		
Hollis,	200.00	
Henry B. Humphrey,	500.00	
George Emerson Lowell,	466.66	
Matthews,	5,197.55	
William Merrick,	200.00	
Morey,	300.00	
Lady Mowlson,	266.66	
Pennoyer,	290.00	
Class of 1835,	150.00	
Fall River,	30.00	
Benjamin D. Greene,	100.00	
Lewis and Harriet Hayden,	200.00	
Rebecca A. Perkins,	150.00	
Henry Bromfield Rogers,	200.00	
Sales,	233.34	
Saltonstall,	200.00	
Mary Saltonstall,	350.00	
Savage,	300.00	
Sever,	150.00	
Sewall,	400.00	
Shattuck,	2,000.00	
Slade,	250.00	
Thayer,	3,000.00	
Gorham Thomas,	200.00	
Toppan,	300.00	
Townsend,	1,183.32	
Walcott,	233.34	
Whiting,	333.34	
Storey,	150.00	\$33,609.19
Paid other Beneficiaries from the following Funds.		
Exhibitions,	\$770.60	
Quincy Tufts,	425.00	
Day,	213.16	
Munroe,	400.00	
Price Greenleaf Aid,	14,930.00	16,738.76
Prizes.		
Boylston Prizes for Elocution,	\$195.00	
Bowdoin Prizes for Dissertations,	575.00	
Sales,	45.00	
"Deturs" from Hopkins Donation,	244.16	1,059.16
Amount carried forward,		\$51,407.11

TABLE NO. II, CONTINUED.

PAYMENTS.

Amount brought forward,		\$51,407.11	
Hemenway Gymnasium.			
Salaries and wages,	\$6,406.50		
Janitors and cleaning,	1,642.92		
Fuel, water, gas, printing, and sundries,	1,960.95		
Repairs and improvements,	494.66		
Apparatus,	750.00		
Insurance,	692.50	\$11,947.53	
Less amount received from other departments,	2,560.32		9,387.21
Jefferson Physical Laboratory.			
Spent on building and fixtures,	\$481.84		
Laboratory expenses,	\$3,178.67		
Less part paid by the College,	600.00	2,578.67	3,060.51
The Joseph Lovering Fund for Physical Research.			
Paid sundry accounts,			450.61
John E. Thayer Fund.			
Expenses of Quarterly Journal of Economics,			408.63
Classical Publication Fund of the Class of 1856.			
Printing Studies in Classical Philology,			300.00
Sanskrit Department.			
Printing Harvard Oriental Series, &c.,			1,898.86
Charles Fairchild's gift for Geological Department.			
Services and expenses,			950.00
Salaries for instruction,			241,649.65
Payments for College Edifices not valued on Treasurer's books.			
Cleaning and care,	\$15,984.54		
Insurance,	3,362.75		
Repairs, improvements, &c.,	6,640.94		
Part of cost of Conant Hall from income thereof,	5,095.58		
Part of cost of Perkins Hall from income thereof,	4,805.43		35,889.24
Cyrus M. Warren Fund.			
Expenses in Chemical Department,			50.00
Botanic Garden and Botanic Museum.			
For salaries, labor, repairs, materials, &c.,	\$12,447.49		
Interest on advances,	563.90		13,011.39
Herbarium.			
For salaries, labor, repairs, materials, &c.,			9,249.68
Amount carried forward,		\$367,712.89	

TABLE NO. II, CONTINUED.

PAYMENTS.

Amount brought forward,		\$367,712.89	
Summer Schools.			
Salaries,	\$8,805.00		
Clerical services,	435.30		
Supplies, materials, cleaning, &c.,	747.47		
Printing,	954.00		
Advertising,	320.37		
Instruments and apparatus,	177.80		
Stationery and postage,	678.93	12,118.87	
<hr/>			
Paid from gifts for books for Political Economy Dept.,	\$18.01		
" " " " " " French "	384.95		
" " " " " " Mathematics "	4.35		
" " " " " " German "	34.15		
" " " " " " Social Questions,	73.85		
" " " " " " Classical Library,	246.01		
" " " " " " Historical "	170.51		
" " " " " " Music,	74.19	1,006.02	
<hr/>			
Paid from gifts for illustrated lectures in Latin and			
Greek Departments,	\$12.00		
Paid from gifts for Greek Department,	250.00	262.00	
<hr/>			
Appropriations for collections, laboratories, &c.			
Physical apparatus (Prof. Trowbridge),	\$800.00		
Mineralogy (Prof. Jackson),	300.00		
Chemistry (Prof. H. B. Hill),	500.00		
Botany (Prof. Goodale),	200.00		
Botany (Prof. Farlow),	200.00		
Zoölogy (Prof. Mark),	200.00		
Zoölogy, for publications,	400.00		
Psychology (Prof. Münsterberg),	200.00		
English (Prof. Child),	150.00		
Modern Languages, for publications,	300.00		
Drawing (Asst. Prof. Moore),	100.00		
Fine Arts (Asst. Prof. Moore),	150.00		
Laboratory fees appropriated,	15,339.55		
Fuel and service in Nat. Hist. Laboratories, . . .	1,500.00		
Expenditures by Mus. Comp. Zoölogy on account of			
Undergraduate Department,	1,500.00		
Fuel, services, etc., in Jefferson Ph. Laboratory,	600.00	22,439.55	
<hr/>			
Appleton Chapel.			
Preaching and morning services,	\$3,140.00		
Organist and Choir-master,	1,500.00		
Choir,	1,250.00		
Music and binding,	241.64		
Hymn Books,	1,158.06		
Fuel, gas, cleaning, &c.,	1,058.56		
Services and wages,	206.00		
Furniture,	36.53	8,590.79	
<hr/>			
Amount carried forward,		\$412,130.12	

TABLE NO. II, CONTINUED.

PAYMENTS.

Amount brought forward,		\$412,130.12
General Expenses.		
Deans and Chairmen of Committees, salaries, clerical and office expenses,	\$10,598.25	
Medical Visitor,	1,000.00	
Admission examinations,	2,281.23	
Commencement Dinner,	670.43	
Music, Class-Day,	125.00	
Pews hired in Cambridge churches,	1,663.50	
Printing office, expenses,	\$19,358.08	
Less receipts,	16,308.32	3,049.76
Printing,	248.14	
Services of examiners and proctors,	4,326.75	
“ “ assistants to instructors,	3,199.10	
“ “ undergraduates,	130.01	
Attendant in Geological Library,	250.00	
Attendants in Historical Library,	405.00	
Attendants in Laboratories,	924.00	
Advertising,	71.88	
Fuel,	6,787.61	
Furniture,	461.47	
Freight, diplomas, and sundries,	1,491.52	
Gas,	4,211.04	
Water rates,	711.19	
Stationery and postage,	305.58	
Legal expenses,	37.94	
Supplies, tools, and materials,	742.71	
Instruments and apparatus,	73.00	
Watchmen,	871.00	
Commission on Admission to N. E. Colleges, . . .	117.04	
Books,	15.48	
Examination of Schools,	147.50	
Use of Grays 18 by English department,	100.00	45,016.13
		<u>\$457,146.25</u>

TABLE NO. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.	
Subscription for Library, (1859)	\$475.50
Nathaniel I. Bowditch,	97.04
Amount carried forward,	<u>\$572.54</u>

TABLE NO. III, CONTINUED.

RECEIPTS.

Amount brought forward,	\$572.54	
Income of the following Funds, etc. (<i>continued</i>).		
Bright, $\frac{1}{2}$ income of the Bright Legacy,	1,130.00	
Constantius, $\frac{1}{2}$ of income,	586.22	
Edwin Conant, $\frac{1}{4}$ of income,	337.77	
Denny,	238.34	
Eliza Farrar,	241.68	
Horace A. Haven,	144.41	
Francis B. Hayes,	453.49	
George Hayward,	237.89	
Thomas Hollis,	107.62	
Sidney Homer,	98.31	
Frederick A. Lane,	238.66	
Lowell,	1,068.66	
Charles Minot, from special investment,	4,200.00	
Lucy Osgood,	321.19	
Mary Osgood,	316.35	
Francis Sales,	178.86	
Stephen Salisbury,	244.26	
Sever,	912.41	
Samuel Shapleigh,	178.72	
George B. Sohler (part of),	49.99	
Charles Sumner,	1,707.97	
Ichabod Tucker, from special investment,	200.00	
George W. Wales, gift, \$200.00		
Interest on unexpended balance, 14.19	214.19	
James Walker,	715.79	
Thomas W. Ward,	238.11	
Executors of Robert Waterston,		
Interest on unexpended balance,	28.30	
J. Huntington Wolcott,	463.48	15,425.21
James Savage Fund for general expenses ($\frac{3}{4}$ of income),	\$1,198.80	
Constantius " " " $\frac{1}{2}$ " "	586.22	
Edwin Conant " " " $\frac{3}{4}$ " "	1,013.30	
Daniel Treadwell " " "	539.01	
Daniel Austin " " "	281.60	
Eben Wright " " "	4,520.00	
Jarvis " " "	22.60	
Price Greenleaf " " "	16,383.90	
Fees for use of Library,	130.00	
Sale of Harvard Memorial Biographies,	2.00	
Gifts for Library Stack Room, \$1,201.83		
" " " " " int. on balance, 424.40	1,626.23	
Sale of duplicate books,	213.28	
Received for books lost,	76.88	
Fines,	2.00	26,595.82
		<u>\$42,021.03</u>

TABLE NO. III, CONTINUED.

PAYMENTS.			
For Books from			
Subscription	Fund (1859),	\$469.37	
Bowditch	"	133.76	
Bright	"	1,223.62	
Conant	"	400.70	
Constantius	"	608.46	
Denny	"	235.70	
Farrar	"	256.40	
Haven	"	161.73	
Hayes	"	449.36	
Hayward	"	241.97	
Hollis	"	117.34	
Homer	"	74.23	
Lane	"	197.80	
Lowell	"	907.05	
Minot	"	2,767.17	
Lucy Osgood	"	296.07	
Mary Osgood	"	340.24	
Sales	"	64.81	
Salisbury	"	267.72	
Sever	"	1,112.04	
Shapleigh	"	141.13	
Sohier	"	174.40	
Sumner	"	2,108.21	
Tucker	"	202.99	
Walker	"	729.40	
Ward	"	209.46	
J. Huntington Wolcott Fund,		403.04	
Wales Gift,		117.83	
Dante Society Gift,		55.01	
Duplicate money,		145.17	
Furness Gift,		4.00	\$14,616.18
Salaries and wages,		\$24,723.00	
Binding,		1,455.09	
Stationery and postage,		316.74	
Fuel,		966.99	
Repairs and improvements,		569.53	
Freight, water, supplies, and sundries,		582.05	
Janitors and cleaning,		827.70	
Furniture,		188.19	
Printing,		1,743.38	
Gore Hall alterations,		2,150.27	33,522.94
			<hr/> \$48,139.12

TABLE NO. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.

Divinity School, balance,	\$1,225.46	
Benjamin Bussey Professorship,	1,698.80	
Parkman Professorship,	723.92	
John Hancock Professorship,	\$271.56	
C. L. Hancock. Interest,	1,989.16	
From special investments,	1,860.21	4,120.93
Winn Professorship of Ecclesiastical History, . .	2,275.64	
Frothingham Professorship,	1,527.62	
Samuel Dexter,	916.66	
Henry Lienow,	415.16	
Mary P. Townsend,	237.30	
Winthrop Ward,	94.92	
Samuel Hoar,	47.46	
Abraham W. Fuller,	47.46	
Caroline Merriam,	47.46	
Joseph Baker,	355.95	
Thomas Tileston of New York Endowment, . .	1,808.00	
Oliver Ames,	768.40	
Henry P. Kidder,	452.00	
Abby Crocker Richmond,	45.20	
New Endowment (1879),	3,228.50	
William B. Spooner,	452.00	\$20,488.84

Income of Scholarship Funds.

Jackson Foundation,	\$646.80	
Thomas Cary,	239.61	
George Chapman,	114.81	
Joshua Clapp,	190.65	
J. Henry Kendall,	220.71	
Nancy Kendall,	149.52	1,562.10

Income of other Funds.

Joshua Clapp,	\$98.45	
William Pomroy,	47.46	
Hannah C. Andrews,	23.73	
Lewis Gould,	41.18	
Daniel Austin,	40.23	
Abner W. Buttrick,	592.07	
Adams Ayer,	45.20	
John W. Quinby,	71.28	
John L. Russell,	45.20	
Edwin Conant,	226.00	
Louisa J. Hall,	23.46	
Rushton Dashwood Burr,	66.90	
Interest on Beneficiary money returned (balance), .	150.92	1,472.08

Amount carried forward, \$23,523.02

TABLE NO. IV, CONTINUED.

RECEIPTS.

Amount brought forward,	\$23,523.02	
Benjamin Bussey Trust ($\frac{1}{4}$ of net income for use of this School),	8,005.17	
Gift from Society for Promoting Theological Education,	1,300.00	
Sale of duplicate books, &c.,	103.38	
Insurance,	17.50	
Fines,	8.25	
Term Bills.		
Instruction,	\$3,670.87	
Receipts from Divinity Hall,	2,970.00	6,640.87
		<u>\$39,598.19</u>

PAYMENTS.

Salaries for instruction,	\$21,399.79	
Services and wages,	1,500.00	
Cataloguing,	1,192.37	
Books and binding,	652.86	
Printing,	136.00	
Proportion of expenses of Gymnasium,	168.00	
Labor, repairs, and improvements,	441.98	
Furniture,	412.21	
Cleaning and care of rooms,	1,337.50	
Fuel, gas, and water,	849.47	
Stationery and postage,	65.80	
Advertising,	94.60	
Diplomas, and sundries,	233.88	
Collation,	87.25	
Taxes on Chelsea Real Estate,	35.26	\$28,656.97
Paid the incumbents of the following Scholarships.		
Jackson Foundation ,	\$640.00	
Thomas Cary ,	320.00	
George Chapman ,	100.00	
Joshua Clapp ,	180.00	
Nancy Kendall ,	93.32	
J. Henry Kendall ,	133.34	1,466.66
Paid beneficiaries from the following Funds:		
Abner W. Buttrick ,	\$586.66	
William Pomroy ,	50.82	637.48
Paid for Books from the following Funds:		
Louisa J. Hall ,	\$7.43	
Rushton Dashwood Burr ,	49.80	57.23
		<u>\$30,818.34</u>

TABLE No. V.

LAW SCHOOL.

RECEIPTS.

Income of the following Funds.

Law School, balance,	\$3,952.11	
Nathan Dane Professorship,	711.90	
Benjamin Bussey "	1,083.90	
Isaac Royall "	377.01	
Weld "	4,293.78	
Bemis "	2,478.59	
Law School Book Fund,	2,125.35	
Benjamin Bussey Trust ($\frac{1}{4}$ of net income for use of this School),	8,005.16	
John Foster , income for Law Students every second year,	143.37	\$23,171.17

Term Bills, instruction,	59,360.00	
Anonymous gift for instruction in the Peculiarities of Massa- chusetts Law,	1,000.00	
Sale of books,	3.00	
		<u>\$83,534.17</u>

PAYMENTS.

Salaries for instruction,	\$35,100.00	
Librarian and Assistants,	4,890.07	
Services of examiners and proctors,	169.90	
Scholarships,	2,700.00	
Books and binding,	3,598.77	
Printing,	3,109.75	
Proportion of expenses of Gymnasium,	1,357.44	
Repairs and improvements,	808.48	
Furniture,	104.99	
Janitor, cleaning, &c.,	1,791.51	
Fuel,	829.69	
Gas,	737.88	
Water rates,	63.00	
Stationery and postage,	399.86	
Advertising,	368.90	
Freight, diplomas, and sundries,	457.23	\$56,487.47

TABLE No. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.

Medical School, balance,	\$3,782.97	
Jackson,	867.52	
Warren, for Anatomical Museum,	614.81	
Ward Nicholas Boylston, for Medical Prizes,	153.23	
Ward Nicholas Boylston, " " Books,	188.03	
George C. Shattuck,	774.23	
Hersey Professorship, $\frac{2}{5}$ income of the fund,	365.53	
Medical Library Fund,	52.93	
Quincy Tufts,	90.40	
David Williams Cheever Scholarship,	246.70	
Isaac Sweetser Scholarship,	274.00	
O. W. Doe "	100.00	
C. P. Strong "	171.90	
C. M. Jones "	273.01	
Alfred Hosmer Linder Scholarship,	18.85	
George Cheyne Shattuck Memorial Fellowship,	244.13	
John Ware " "	233.05	
Charles Eliot Ware " "	243.72	
Edward M. Barringer,	1,153.19	
Henry Harris, $\frac{1}{2}$ of income,	676.62	
Mary W. Swett,	712.58	
Samuel W. Swett,	904.00	
Samuel E. Fitz,	82.99	
J. Ingersoll Bowditch,	290.00	
New subscription (1888),	1,751.50	
Ellis Gifts (balance),	44.41	\$14,310.30

Gifts for present use, 3,980.00

Term Bills.

Instruction,	\$89,529.73	
Graduation fees,	1,890.00	
In Chemical Laboratory, breakage and chemicals,	1,652.51	
In Practical Anatomy, use of material,	844.00	
In Embryology, use of material,	88.00	
Extra examination fees,	164.00	
		94,168.24

From Dental and Veterinary Schools for Laboratory instruction,	1,020.00
Repayment of advances for the purchase of microscopes,	604.25
Sale of old material,	5.25
Unexpended balance of appropriation returned,	2.00

\$114,090.04

TABLE NO. VI, CONTINUED.

PAYMENTS.

Boylston Medical Prizes.

Advertising,	\$50.00	
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Warren Anatomical Museum.

Expenses and additions to collection,	441.24	
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Edward M. Barringer Scholarship No 1,	\$290.00	
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“ “ “ “ “ 2,	200.00	\$490.00
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David Williams Cheever Scholarship,	200.00	
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Isaac Sweetser Scholarship,	200.00	
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C. M. Jones “ “ “ “ “ “	200.00	
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O. W. Doe “ “ “ “ “ “	100.00	
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Charles Pratt Strong Scholarship,	100.00	
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John Ware Memorial Fellowship,	225.00	
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Charles Eliot Ware Memorial Fellowship,	225.00	
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George Cheyne Shattuck Memorial Fellowship,	450.00	
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Faculty Scholarships,	800.00	
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Beneficiaries from Foster income,	150.00	3,140.00
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J. Ingersoll Bowditch Fund, Physiological apparatus, &c.,		484.42
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Ellis Gifts, Expenses and salaries, Physiology and Pathological Bacteriology,		2,619.42
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Books and binding, from Boylston Fund for Books,		405.24
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Chemical Laboratory,	\$1,622.41	
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Physiological Laboratory,	400.00	
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Anatomy,	2,500.00	
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Pathological Laboratory,	600.00	
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Bacteriological Laboratory,	868.00	
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Obstetrics,	200.00	
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Histology and Embryology,	803.00	
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Therapeutics and Hygiene,	180.00	
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Pharmacology and Therapeutics,	250.00	
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Gynaecology,	25.00	
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Clinical Surgery,	50.00	
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Nervous Diseases,	25.00	
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Salaries for instruction,	72,975.00	
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Repairs and improvements,	4,579.66	
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Refrigerators,	2,842.32	87,920.39
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Graduates courses, fees repaid to Instructors,	\$2,010.83	
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Summer “ “ “ “ “ “	2,375.00	4,385.83
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General Expenses.

Advertising and catalogues,	\$1,027.00	
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Fuel,	1,807.69	
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Gas,	1,464.88	
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Insurance,	25.00	
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Printing,	563.35	
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Amounts carried forward,	\$4,887.92	\$99,446.54
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TABLE NO. VI, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$4,887.92	\$99,446.54
General Expenses (<i>continued</i>).		
Dean, Secretary, Proctors, Clerks, lab'ry attendants,	4,842.80	
Stationery and postage,	690.69	
Water rates,	908.40	
Furniture,	345.35	
Mechanics, janitor, and cleaning,	5,130.42	
Freight, diplomas, and sundries,	823.16	
Supplies, tools, and material,	1,722.69	
Collations,	120.00	
Instruments and apparatus,	690.00	
Legal services,	28.38	
Electric power,	279.09	20,468.90
		<u>\$119,915.44</u>

TABLE NO. VII.

DENTAL SCHOOL.

RECEIPTS.

Income of the following Funds.		
Dental School, balance,	\$554.47	
Endowment,	689.57	
Gifts for new building,	406.41	\$1,650.45
Term bills for instruction,		12,800.00
Fees from Infirmary,	\$4,600.00	
“ “ Laboratory,	1,985.70	6,585.70
Gifts for present use,		75.00
“ “ new building,		3,000.00
		<u><u>\$24,111.15</u></u>

PAYMENTS.

Advertising,	\$309.45
Care of rooms and cleaning,	945.85
Freight, diplomas, and sundries,	320.47
Fuel,	469.48
Gas,	148.60
Supplies, &c.,	3,345.77
Furniture,	249.08
Repairs and improvements,	4,501.44
Amount carried forward,	<u>\$10,290.14</u>

TABLE NO. VII, CONTINUED.

PAYMENTS.

Amount brought forward,	\$10,290.14	
Salaries for instruction,	8,250.00	
Stationery and postage,	217.62	
Water rates,	81.20	
Medical School, for Laboratory instruction,	508.00	
Printing,	271.51	
Instruments and apparatus,	541.70	
Services and wages,	408.72	
Legal services,	32.68	\$20,601.57

TABLE NO. VIII.

LAWRENCE SCIENTIFIC SCHOOL.

RECEIPTS.

Income of the following Funds.

Lawrence Scientific School, balance,	\$243.27	
Professorship of Engineering,	1,844.43	
Abbott Lawrence ,	2,781.43	
James Lawrence ,	2,276.95	
John B. Barringer ,	1,387.05	
George A. Gardner ,	256.10	\$8,789.23
Term Bills, for instruction,		45,405.00
Laboratory fees,		66.25
Gifts for present use,		5,500.00
		<u>\$59,760.48</u>

PAYMENTS.

George A. Gardner Fund.

Photographs, &c., for Geological department, . . .	\$426.42
Salaries for instruction,	38,449.76
Instruments and apparatus,	11,581.83
Books and binding,	1,574.05
Printing,	675.00
Fuel,	876.45
Gas,	101.05
Janitor and cleaning,	746.70
Repairs and improvements,	4,215.86
Proportion of expenses of Gymnasium,	1,034.88
Furniture,	1,313.80
Advertising,	505.23
Stationery and postage,	585.28
Services and wages,	1,737.32

Amount carried forward, \$63,823.63

TABLE NO. VIII, CONTINUED.

PAYMENTS.

Amount brought forward,	\$63,823.63	
Supplies, tools, and materials,	1,965.95	
Electric power,	542.33	
Scholarships,	3,500.00	
Beneficiaries,	600.00	
Water,	61.50	
Insurance,	84.00	
Sundries,	759.95	
Laboratory Attendant,	60.00	
Library Attendant,	696.80	
Appropriation for Department of Physiology and Hygiene,	66.25	
Mechanics' services in " " " " " "	900.00	
" " " " Electrical Engineering, .	892.19	
" " " " Mechanical " "	1,335.05	\$75,287.65

TABLE NO. IX.

MUSEUM OF COMPARATIVE ZOOLOGY.

RECEIPTS.

Income of the following Funds.

Gray Fund for Zoölogical Museum,	\$2,260.00	
Agassiz Memorial, interest,	\$12,615.27	
From special investment,	941.71	13,556.98
Teachers and Pupils ,		343.25
Humboldt ,		349.89
Permanent Fund for Museum of Zoölogy,	5,309.60	
Virginia Barret Gibbs Scholarship,	236.85	\$22,056.57
Sturgis Hooper ,		4,520.00
		<u>\$26,576.57</u>

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.

Gray ,	\$2,260.00	
Agassiz Memorial, general expenses,	9,347.39	
Agassiz Memorial, advances repaid,	4,209.59	
Teachers and Pupils ,	343.25	
Humboldt ,	349.89	
Permanent,	5,309.60	\$21,819.72
Sturgis Hooper , Professor of Geology,		4,590.00
		<u>\$26,409.72</u>

TABLE NO. X.
OBSERVATORY.

RECEIPTS.

Income of the following Funds.

Edward B. Phillips,	\$4,985.29	
James Hayward,	949.20	
Robert Treat Paine,	12,364.82	
Paine Professorship of Practical Astronomy, . .	2,260.00	
Uriah A. Boyden, interest,	\$9,427.54	
For use of apparatus,	190.00	9,617.54
Augustus Story,	604.78	
David Sears,	1,375.07	
Josiah Quincy,	474.96	
James Savage ($\frac{1}{4}$ of net income),	399.60	
Charlotte Harris,	90.40	
Thomas G. Appleton,	226.00	
J. Ingersoll Bowditch,	113.00	
New Endowment (1882),	2,260.00	\$35,720.66

Sale of Observatory publications,	\$84.69	
" " grass,	20.00	104.69

Mrs. Henry Draper, gift for special research (additional),	\$9,999.96	
Interest on unexpended balance,	48.73	10,048.69

Miss Catherine W. Bruce's gift for a photographic telescope, interest on unexpended balance,	480.02	
Use of house by College officer,	600.00	
From A. Lawrence Rotch, on account of publishing Annals, .	244.98	
		<u>\$47,199.04</u>

PAYMENTS.

From Uriah A. Boyden Fund, supplies, apparatus, services, &c.,	\$8,706.17	
" Draper Memorial, supplies, apparatus, services, &c.,	8,623.60	
" Bruce gift for telescope,	14,601.25	
" Josiah Quincy Fund, printing Observatory publications,	1,198.75	
Salaries,	\$9,500.00	
Services and wages,	7,381.89	
Cleaning and care of Observatory,	497.38	
Gas,	37.59	

Amounts carried forward, \$17,416.86 \$33,129.77

TABLE NO. X, CONTINUED.

PAYMENTS.

Amounts brought forward,	\$17,416.86	\$33,129.77
Instruments and apparatus, including repairs on same, .	669.08	
Repairs and improvements on buildings and grounds, .	1,864.79	
Stationery, postage, and telegraphing,	543.93	
Fuel,	350.11	
Books and binding,	838.54	
Water,	15.50	
Printing,	689.57	
Freight, chemicals, and sundries,	256.25	
Furniture,	202.96	
Interest on advances,	254.88	
Supplies and materials,	426.20	
Use of house,	90.00	23,618.67
		<u>\$56,748.44</u>

TABLE NO. XI.

BUSSEY INSTITUTION.

RECEIPTS.

Interest on unexpended balance,	\$747.25	
From Bussey Trust ($\frac{1}{2}$ net income),	16,010.33	
Fees for instruction,	360.00	
Sale of wood, hay, and sundries,	509.11	
Horticultural Department, prizes, sale of flowers, plants, &c.,	2,244.32	
Board of horses, cattle, &c.,	2,186.67	<u>\$22,057.68</u>

PAYMENTS.

Salaries,	\$6,227.40	
Books,	51.75	
Fuel,	98.96	
Services and wages,	2,238.56	
Horticultural Department, expenses,	2,653.47	
Repairs and improvements,	1,373.81	
Grain, farming tools, &c.,	623.74	
Advertising,	79.50	
Freight, telegrams, weighing hay, &c.,	41.66	
Insurance,	45.00	
Legal expenses,	58.24	
Repayments to Bussey Real Estate,	10,866.26	<u>\$24,358.35</u>

TABLE NO. XI, CONTINUED.

James Arnold Fund.*Receipts.*

Income of Fund,	\$7,069.91
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Payments.

19/20 of income carried to Arnold Arboretum,	\$6,716.42
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Arnold Arboretum.*Receipts.*

Income from James Arnold Fund ,	\$6,716.42	
Interest on Gifts for construction account,	321.85	
Interest on deposit with New England Trust Co.,	9.75	
Sale of wood, grass, &c.,	244.00	\$7,292.02
Gift for purchase of books,		1,938.00
		<u>\$9,230.02</u>

Payments.

Salary of Director and Assistant,	\$3,500.00	
Expenses of Arboretum, services, labor, &c.,	7,709.34	
Specimens and expenses for Herbarium and Museum, . .	544.41	
Books,	1,955.51	\$13,709.26

TABLE NO. XII.

SCHOOL OF VETERINARY MEDICINE.**RECEIPTS.**

Term bills, for instruction,	\$5,913.10	
" " " graduation fees,	300.00	
" " " use of microscopes,	92.00	\$6,305.10
Fees from Hospital and Forge,	15,703.58	
Interest on deposit with New England Trust Co.,	3.79	
Use of room by State of Massachusetts,	200.00	
Insurance,	12.00	<u>\$22,224.47</u>

PAYMENTS.

Salaries,	\$7,750.00
Services and wages,	6,212.47
Instruments and apparatus,	213.17
Rent,	1,480.00
Hay, grain, supplies, &c.,	4,749.82

Amount carried forward,	\$20,405.46
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TABLE NO. XII, CONTINUED.

PAYMENTS.

Amount brought forward,	\$20,405.46	
Printing,	175.38	
Stationery, postage, telephone, &c.,	393.91	
Repairs and improvements,	443.32	
Fuel,	225.10	
Water,	66.60	
Gas,	138.50	
Freight, diplomas, and sundries,	299.23	
Taxes,	257.28	
Interest on advances,	1,306.97	
Advertising,	366.94	
Medical School, for Laboratory instruction,	512.00	
Insurance,	180.00	
Delegates' expenses,	77.00	\$24,847.69

TABLE NO. XIII.

MISCELLANEOUS FUNDS.

Bussey Trust.

Receipts.

Net income from Real Estate,	\$37,068.56
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Payments.

Annuities,	\$5,047.90	
One-half of the remaining income to Bussey Institution,	16,010.33	
One-quarter " " Divinity School,	8,005.17	
" " " " Law School,	8,005.16	\$37,068.56

Price Greenleaf Fund.

Receipts.

Income of special investment,	\$35,767.80
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Payments.

Scholarships,	\$3,200.00	
Beneficiary money transferred to College account,	16,383.90	
Balance of income for Library expenses,	16,383.90	\$35,967.80

Gray Fund for Engravings.

Receipts.

Interest on Fund,	\$723.06	
From sale of Catalogues,	28.00	\$751.06

Payments.

To the Treasurer of the Museum of Fine Arts,	\$374.25
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TABLE No. XIII, CONTINUED.

Daniel Williams Fund.

<i>Receipts.</i>		
Interest on Fund,		\$741.14
<i>Payments.</i>		
Treasurer of Mashpee Indians,	\$529.91	
" " Herring Pond Indians,	264.96	\$794.87

Sarah Winslow Fund.

<i>Receipts.</i>		
Interest on Fund,		\$216.87
<i>Payments.</i>		
Minister at Tyngsborough, Mass.,	\$113.37	
Teacher at " "	113.37	
Commission on income credited to University,	5.82	\$232.56

Class Funds.

<i>Receipts.</i>		
Class of 1834, income of special investment,	\$40.00	
" " 1853, " " " "	145.00	\$185.00
<i>Payments.</i>		
To Secretary of the Class of 1834,	\$40.00	
" " " " " " 1853,	145.00	\$185.00

Huntington Frothingham Wolcott Fund.

<i>Receipts.</i>		
Interest on Fund,		\$452.00
<i>Payments.</i>		
Treasurer of the Peabody Museum of American Archaeology and Ethnology,		\$508.15

John Witt Randall Fund.

<i>Receipts.</i>		
Interest on Fund,		\$1,397.86
<i>Payments.</i>		
Salary of Curator and expenses,		\$683.70

TABLE NO. XIII, CONTINUED.

Sundry Accounts.

Receipts.

Gospel Church Fund (accumulating).		
Interest on Fund,	\$208.51	
Robert Troup Paine Fund (accumulating).		
From special investment,	1,295.00	
Gore Annuity Fund , interest,	1,263.16	
Lucy Osgood Annuity Fund , interest,	194.90	
George William Sawin Annuity Fund , income of special investments,	144.27	
O. W. Doe Scholarship Fund ,		
Part of interest on Fund,	32.83	
Robert C. Winthrop Scholarship Fund , interest, . .	75.35	
Henry Willard Williams Fund , interest,	1,390.50	
Advances to School of Veterinary Medicine, from General Investments,	2,623.22	
Advances to Woodland Hill Fund, from General Invest- ments,	2,186.93	
Advances to Lawrence Scientific School, from General Investments,	9,974.43	
Advances to Botanic Department, from General Invest- ments,	3,421.06	
Edwin Conant Bequest , gain from change of special Investment,	99.80	
Bursar's sundry accounts,	24,909.35	\$47,819.31

Payments.

Gore Fund , annuity,	\$300.00	
Lucy Osgood Fund , annuity,	420.00	
Henry Willard Williams Fund , annuity,	1,390.50	
George William Sawin Fund , annuity,	144.27	
Gurney Fund , annuities,	1,000.00	
Advances to Observatory, repaid in part,	2,271.62	
Temporary deposits, repaid in part,	440.00	
Bussey Trust .		
Legacies paid to Mrs. Motley's children, \$18,000.00		
Transferred to Woodland Hill Fund, . .	2,383.62	20,383.62
Woodland Hill Fund .		
Transferred to Bussey Real Estate, . .	\$7,322.92	
Less " from " " \$2,752.37		
" " " " Trust, 2,383.62	5,135.99	2,186.93
Overpayments of interest repaid.		
From Dental School Building Fund, . .	\$348.39	
" Huntington Frothingham Wolcott Fund ,	24.15	372.54
		\$28,909.48

GENERAL SUMMARY OF THE TABLES.

		Receipts.	Payments.
Table I.	University,	\$82,251.56	\$253,596.24
Table II.	College,	497,784.87	457,146.25
Table III.	Library,	42,021.03	48,139.12
Table IV.	Divinity School,	39,598.19	30,818.34
Table V.	Law School,	83,534.17	56,487.47
Table VI.	Medical School,	114,090.04	119,915.44
Table VII.	Dental School,	24,111.15	20,601.57
Table VIII.	Lawrence Scientific School,	59,760.48	75,287.65
Table IX.	Museum of Comparative Zoölogy,	26,576.57	26,409.72
Table X.	Observatory,	47,199.04	56,748.44
Table XI.	Bussey Institution,	22,057.68	24,358.35
	James Arnold Fund,	7,069.91	6,716.42
	Arnold Arboretum,	9,230.02	13,709.26
Table XII.	School of Veterinary Medicine,	22,224.47	24,847.69
Table XIII.	Bussey Trust,	37,068.56	37,068.56
	Price Greenleaf Fund,	35,767.80	35,967.80
	Gray Fund for Engravings,	751.06	374.25
	Daniel Williams Fund,	741.14	794.87
	Sarah Winslow Fund,	216.87	232.56
	Class Funds,	185.00	185.00
	Huntington Frothingham Wolcott Fund,	452.00	508.15
	John Witt Randall Fund,	1,397.86	683.70
	Sundry Accounts,	47,819.31	28,909.48
		<hr/>	<hr/>
		\$1,201,908.78	\$1,319,506.33
			<hr/>
			1,201,908.78
			<hr/>
Balance,			\$117,597.55

Which is the net decrease of the Funds and balances, excluding gifts for capital account, as also shown on page 33. This decrease is less than the amount of the payments made during the year for the construction of Perkins Hall, Conant Hall, and the Fogg Art Museum, from the bequests given therefor, as stated on page 45.

Certificate of the Committees of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

The committees appointed by the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending July 31, 1895, have, with the assistance of an expert chosen by them, examined and audited the Cash book covering the period from August 1, 1894, to July 31, 1895, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were on hand at the beginning of said year, or have been received by him during said year, are now in his possession, or are fully accounted for by entries made therein; they have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

They have in like manner satisfied themselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

They have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

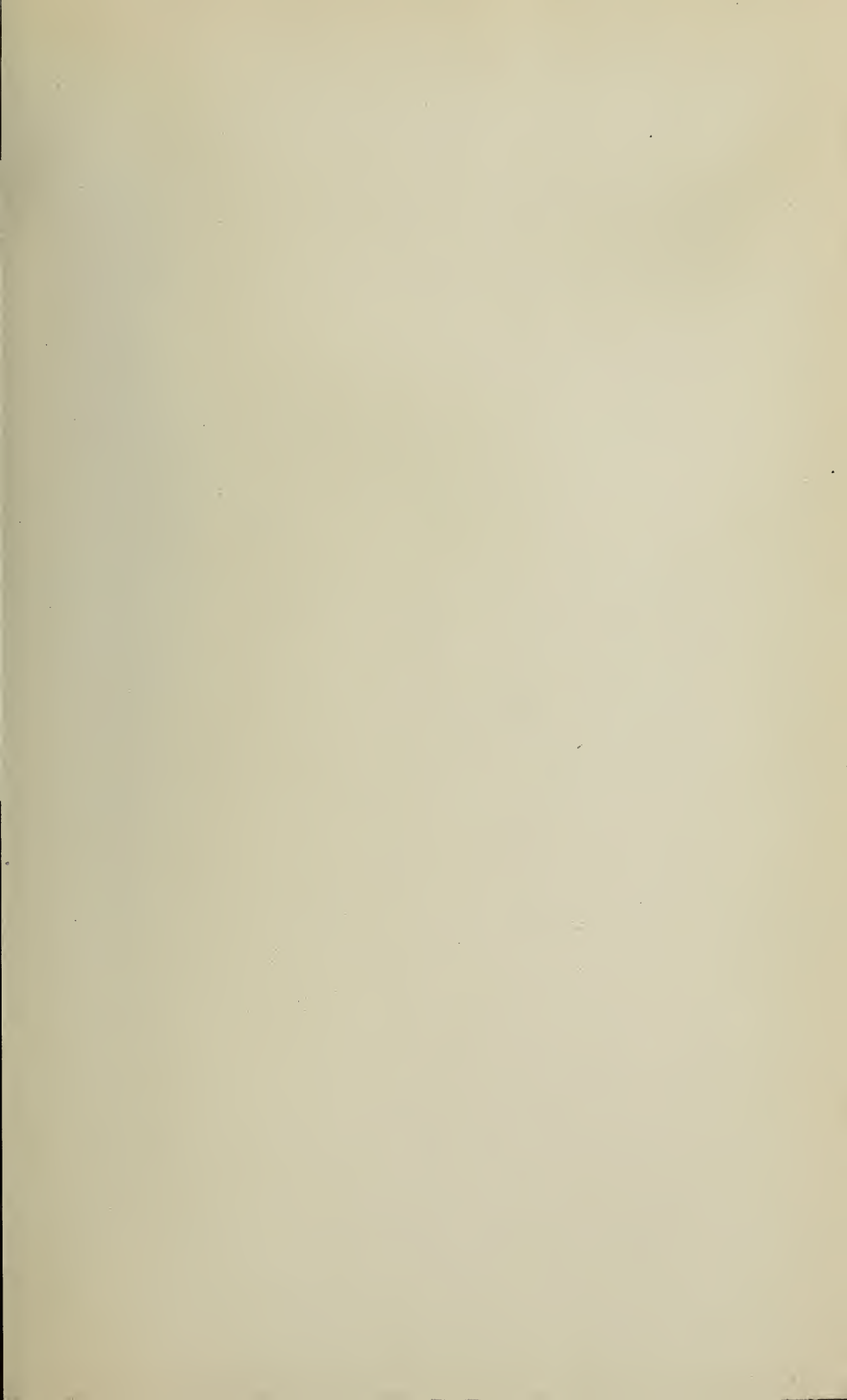
FRANCIS C. LOWELL,

} *Committee on the part of
the Corporation.*

MOSES WILLIAMS,
T. JEFFERSON COOLIDGE,
CHARLES HENRY PARKER,
ISRAEL M. SPELMAN,
JACOB C. ROGERS,
JOHN L. GARDNER,

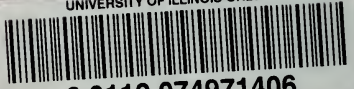
} *Committee on the part of the
Board of Overseers.*

Boston, January 4, 1896.





UNIVERSITY OF ILLINOIS-URBANA



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